SIEMENS

VIDEORECORDER FM706Q1/N1/V1

ELEKTRISCHER ABGLEICH/ELECTRICAL ADJUSTMENT

INHALTSVERZEICHNIS

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Ausgabe 9140
Issue

Änderungen vorbehalten
Subject to modifications

Ident-Nr. 53 5441

1. Anordnung der Schaltplatinen

1.1 Haupt-Leiterplatten

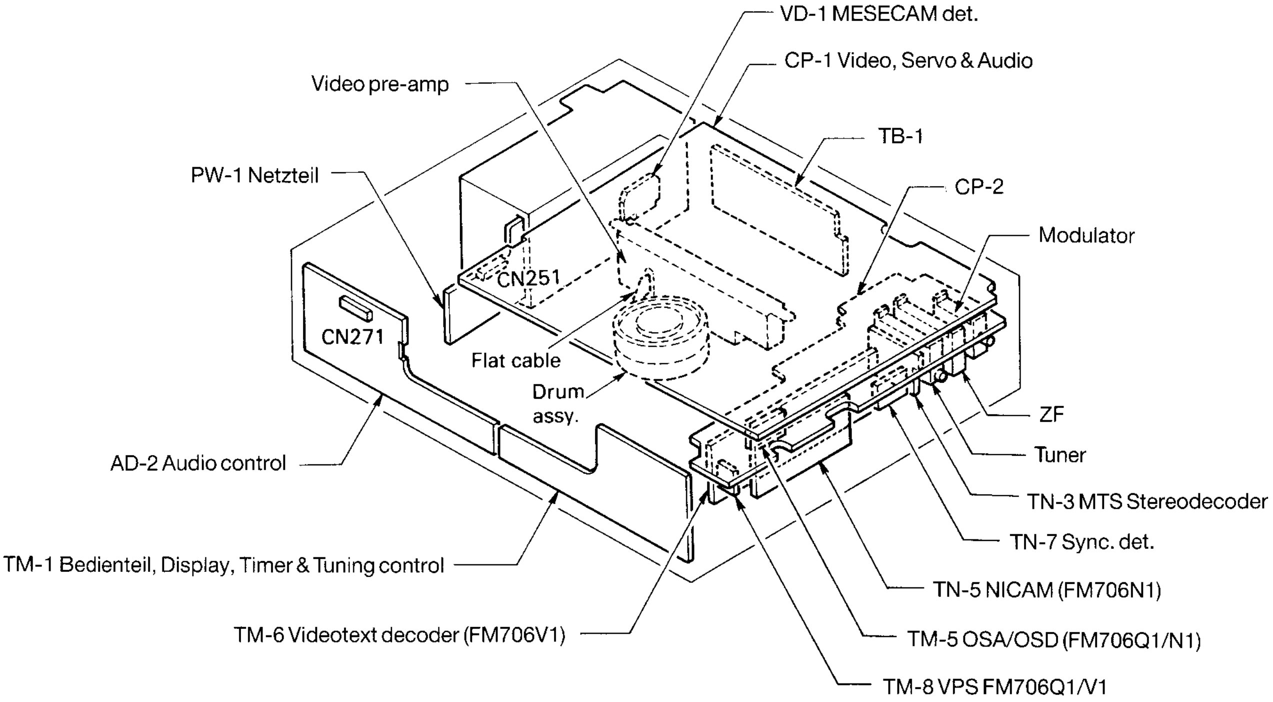

VD-1 MESECAM det.
CP-1 Video, Servo & Audio
Video pre-amp
TB-1
PW-1 Netzteil
CP-2
Modulator
CN251
CN271
Flat cable
Drum assy.
ZF
Tuner
AD-2 Audio control
TN-3 MTS Stereodecoder
TN-7 Sync. det.
TM-1 Bedienteil, Display, Timer & Tuning control
TN-5 NICAM (FM706N1)
TM-6 Videotext decoder (FM706V1)
TM-5 OSA/OSD (FM706Q1/N1)
TM-8 VPS FM706Q1/V1

Bild 1.1

1.2 Anordnung der Meß- und Abgleichpunkte des Bandlaufes

- Der Anschluß für den Abgleich des Bandlaufes (TP182/183) ist in der untenstehenden Abbildung gezeigt.
  Den Mechanischen Abgleich erhalten Sie unter der Identnummer: 53 5372.

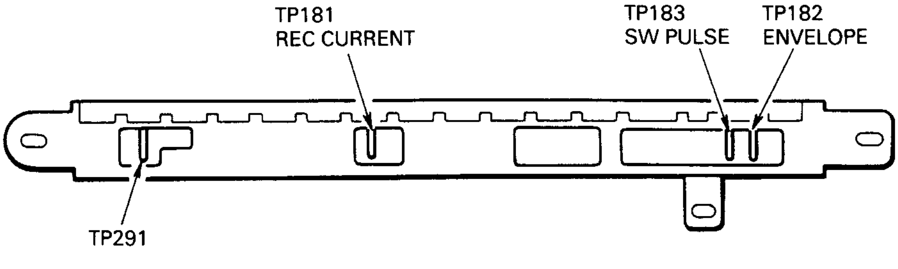

TP181
REC CURRENT
TP183
SW PULSE
TP182
ENVELOPE
TP291

Bild 1.2 VP-1 (Video-Vorverstärker)

2. ELEKTRISCHER ABGLEICH

2.1 VORBEREITUNG

2.1.1 BENÖTIGTE MESSGERÄTE UND HILFSMITTEL

- Farbfernsehgerät
- PAL-Farbbalkengenerator mit HF- und Videoausgang
- PAL TV-Testsignalgenerator (Multi-Burst-Signal mit Farb-Burst)
- Audio-Signalgenerator
- Oszilloskop (Zweikanal, Frequenzbereich 10 MHz oder mehr, Tastkopf 10:1)
- Frequenzzähler (bis 10 MHz oder mehr)
- Digitalvoltmeter
- AC-Voltmeter
- Eingangs-/Ausgangs-Tastköpfe
- Abgleichkassette (340158) PAL-Farbbalken 1 kHz
- Abgleichkassette (340157) Grautreppe 6 kHz
- Abgleichkassette (340165) D.O.C.-Überprüfung
- Abgleichkassette (340163) PAL-Grautreppe 6 kHz, PAL-Farbbalken 1 kHz, SECAM-Farbbalken 1 kHz, PAL HF-Wobbelsignal MESECAM Farbbalken 1 kHz, NTSC-Farbbalken 1 kHz
- Abgleichkassette (340265) PAL-Farbbalken Hifi-Bandpaßfilter (BPF)
- Abgleichkassette (340162) AF-Farbbalken 1 kHz
- Adapter (340296) 12-poliges Kabel für die Platine VP-1. Zur Vereinfachung des Abgleichs verbinden Sie das Flachbandkabel der Kopftrommel-Einheit über den Adapter mit der Platine VP-1, wie in Abb. 2.1.1 gezeigt. Stellen Sie außerdem sicher, daß beim Abgleich der Platine VP-1 das Abschirmgehäuse mit dem Metallchassis verbunden ist, damit die Abschirmung erhalten bleibt.
- Adapter (340295) für die Platine AD-2.
  Zur Vereinfachung des Abgleichs schließen Sie das Flachbandkabel über den Adapter (Abb. 2.1.2) an CN251 der Platine CP-1 und die andere Seite an CN271 der Platine AD-2 an.

2.1.2 VOREINSTELLUNGEN

Da das HF-Eingangssignal für den Abgleich der einzelnen Schaltungen verwendet wird, schließen Sie den Farbbalkengenerator an die Buchse ANT IN des Videorecorders an. Das HF-Eingangssignal wird im Tuner und in der ZF-Stufe verarbeitet. Es ist wichtig, daß das Video-Ausgangssignal der ZF-Stufe die in Abb. 2.1.3 gezeigten Spezifikationen einhält. Schließen Sie das Oszilloskop mit einem Abschlußwiderstand von 75 Ohm an die Buchse VIDEO OUTPUT an, und überprüfen Sie das Videosignal.

- Die Amplitude des Horizontal-Synchronsignals muß ca. 0,3 Vss betragen.
- Die Amplitude des Videosignals muß ca. 0,7 Vss betragen.
- Beobachten Sie den Fernsehbildschirm und führen Sie die Feineinstellungen so durch, daß die Amplitude des Farb-Burstsignals ca. 0,3 Vss beträgt.

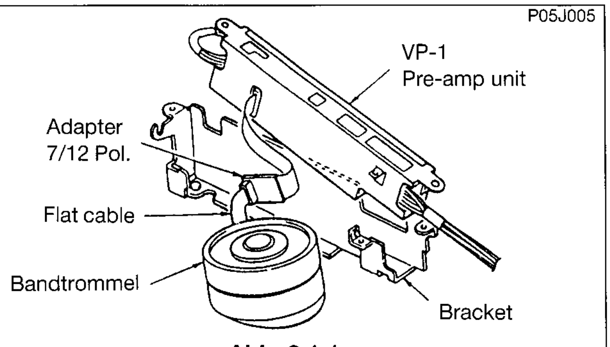


Abb. 2.1.1

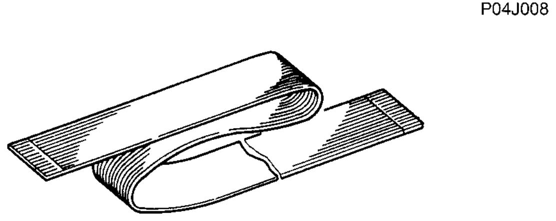


Abb. 2.1.2

- Vergewissern Sie sich, daß keine Spitzen im Synchronisationsteil des Horizontal-Synchronsignals auftreten.

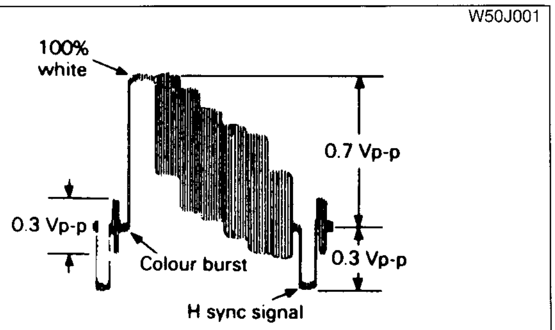
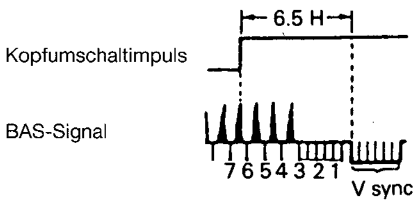


Abb. 2.1.3

2.2 ABGLEICH DER SERVOSCHALTUNG ... PLATINE CP-1

HINWEIS (1): Dieser Abgleich muß nach der Durchführung des Bandlauf-Abgleichs durchgeführt werden.
(2): Wenn der Abgleich des Bandlaufes nach diesem Abgleich durchgeführt wird, führen Sie die Einstellungen unter Punkt 1 KOPFUMSCHALTPOSITION erneut durch.

Nr.	Abgleich	Eingangssig.	Betriebsart	Meßpunkt	Lage	Anmerkung
1	KOPF-UMSCHALT-POSITION	Abgleich-kassette (340157)	PLAY (Betriebsart SP)	VIDEO OUTPUT TP101 Impuls RF SW TP351 (Platine CP-1)	VR351	W25S011  6.5 H Kopfumschaltimpuls BAS-Signal 7 6 5 4 3 2 1 V sync 1. Stellen Sie den Tracking-Einsteller in Mittelstellung (Anzeige „T -:-“). 2. Stellen Sie VR351 so ein, daß die Phase der ansteigenden Flanke des Vertikal-Synchronsignals um 6,5 ± 0,5 H vom Anstieg des Kopfumschaltsignals verzögert ist.
2	STILL V-LOCK für BETRIEBS-ART SP	Farbbalken aus Farbbalken-generator	REC ↓ PLAY ↓ STILL (Betriebsart SP)	Fernseh-bildschirm	Tracking control Tasten +/– (Frontblende)	1. Schalten Sie den Videorecorder in die Betriebsart REC (SP), und führen Sie in der Mitte einer Kassette eine Aufzeichnung durch. 2. Spielen Sie die Aufnahme ab, und schalten Sie den Videorecorder auf STILL. 3. Stellen Sie mit den Trackingtasten das Vertikal-Jitter auf Minimum.

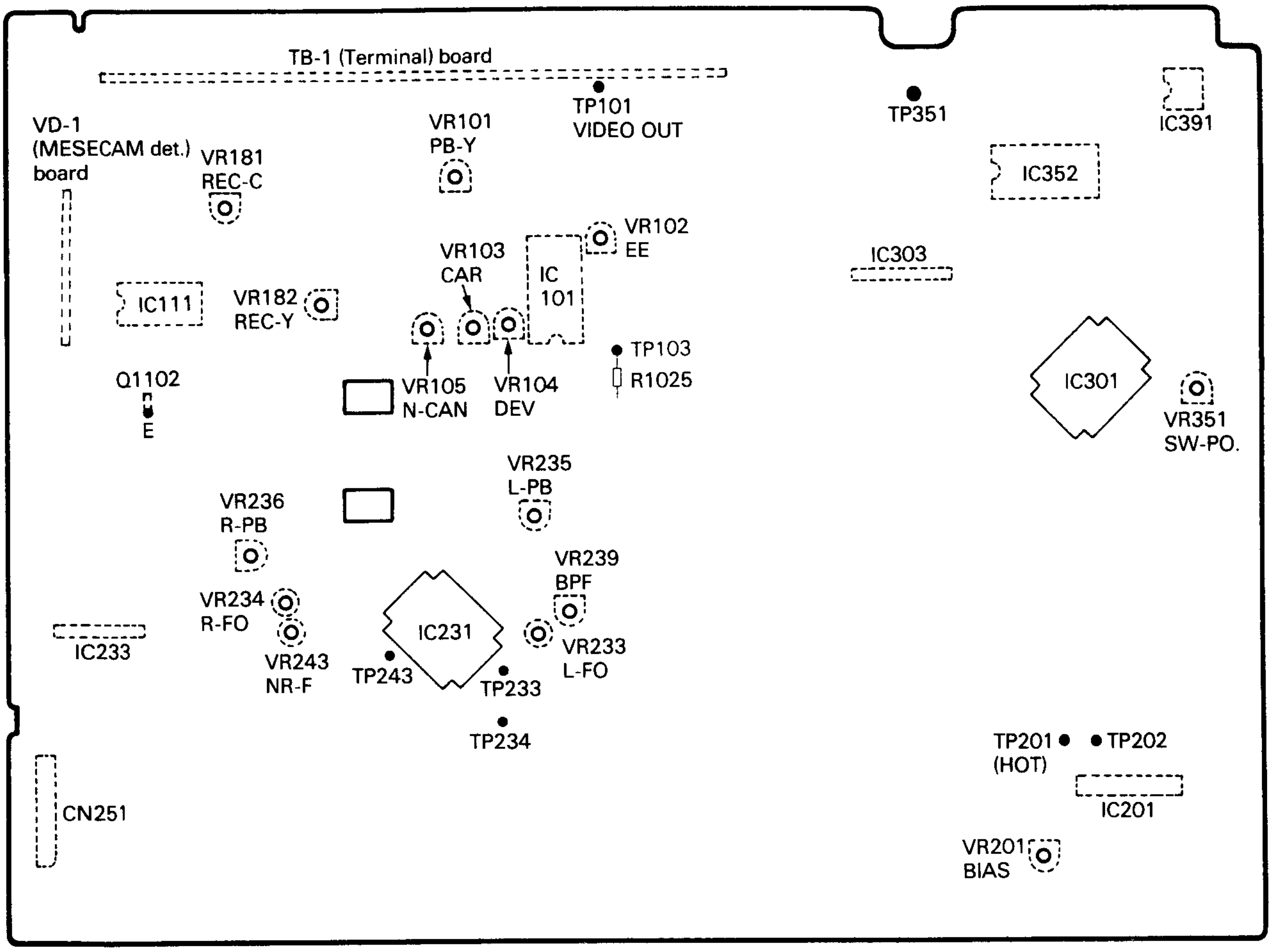
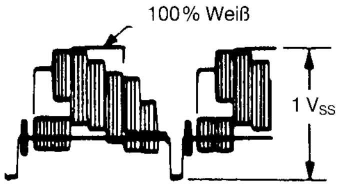
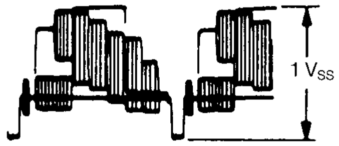
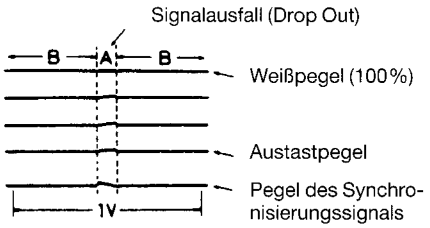
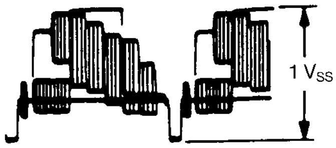
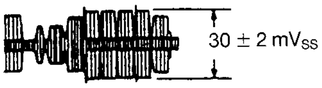
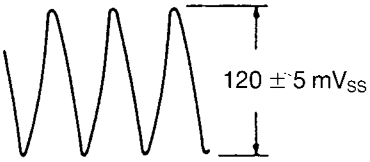

TB-1 (Terminal) board
TP101
VIDEO OUT
TP351
IC391
VD-1
(MESECAM det.)
board
VR101
PB-Y
VR181
REC-C
IC352
VR102
EE
VR103
CAR
IC
101
IC303
IC111
VR182
REC-Y
TP103
R1025
Q1102
E
VR105
N-CAN
VR104
DEV
IC301
VR351
SW-PO.
VR235
L-PB
VR236
R-PB
VR239
BPF
VR234
R-FO
IC233
IC231
VR233
L-FO
VR243
NR-F
TP243
TP233
TP234
TP201
(HOT)
TP202
IC201
CN251
VR201
BIAS

Abb. 2.2.1 Platine CP-1 (Leiterbahnseite)

2.3 ABGLEICH DER VIDEOSCHALTUNG ... PLATINE CP-1 UND VP-1

ANMERKUNG:
1. Für den Abgleich Nr. 1, Nr. 2 und Nr. 5 ist der Video-Ausgang TP101 mit 75 Ohm anzuschließen.
2. Wiederholen Sie den Abgleich Nr. 4 und Nr. 5 wechselweise, bis die korrekten Meßwerte erreicht werden.
3. Aufnahme ohne Signal bedeutet, daß am Video-Eingang kein Videosignal anliegt.

Nr.	Abgleich	Eingangssig.	Betriebsart	Meßpunkt	Lage	Anmerkung
1	Video-Eingangs-pegel Anmerkung 1	Farbbalken aus Generator (100% Weißpegel)	E-E	Video-ausgang TP101	VR102	 Stellen Sie mit VR102 einen Pegel von 1,00 ± 0,05 V_{SS} ein.
2	Wiedergabe-pegel Anmerkung 1	Abgleich-kassette 754965 (340163)	PLAY (Farbbalken)	Video-ausgang TP101	VR101	 Stellen Sie mit VR101 einen Pegel von 1,00 ± 0,05 V_{SS} ein.
3	CCD Pegel (N-CAN)	Abgleich-kassette 755435 (340165)	PLAY	Video-ausgang TP101	VR105	 Signalausfall (Drop Out) B A B Weißpegel (100%) Austastpegel Pegel des Synchro-nisierungssignals 1V 1. Stellen Sie die Zeitablenkung des Oszillografen auf 1 ms/Div. 2. Stellen Sie VR105 so ein, daß der Drop Out A von 100% Weiß und der Teil B gleichen Pegel aufweisen.
4	FM-Träger Anmerkung 2, 3	Kein Signal	REC	TP103	VR103	1. Schalten Sie den Videoeingang in die AV-Stellung. Legen Sie kein Signal an den Eingang. 2. Stellen Sie mit VR103 eine Frequenz von 3,85 ± 0,05 MHz ein.
5	FM-Hub Anmerkung 1, 2	Farbbalken aus Generator (100% Weißpegel)	REC (Abgleich) ↓ PLAY (Check)	Video-ausgang TP101	VR104	 1. Spielen Sie eine Eigenaufnahme ab. Überprüfen Sie, daß der Videopegel 1,00 ± 0,05 V_{SS} beträgt. 2. Weicht der Pegel vom Sollwert ab, verstellen Sie VR104 so lange, bis sich der korrekte Wert einstellt.

Nr.	Abgleich	Eingangssig.	Betriebsart	Meßpunkt	Lage	Anmerkung
6	Chroma-Aufnahmestrom	Farbbalken aus Generator	REC	TP181 (Signal) Abschirmung (Masse) (VP-1)	VR181	 1. Drehen Sie VR182 im Gegenuhrzeigersinn bis der minimale Pegel erreicht ist. 2. Stellen Sie mit VR181 einen Pegel von 30 ± 2 mV_{SS} ein.
7	Luminanz-Aufnahmestrom Anmerkung 3	Kein Signal	REC	TP181 (Signal) Abschirmung (Masse) (VP-1)	VR182	 1. Schalten Sie den Video-Eingang auf AV und schalten Sie auf REC. 2. Stellen Sie mit VR182 einen Pegel von 120 ± 5 mV_{SS} ein.

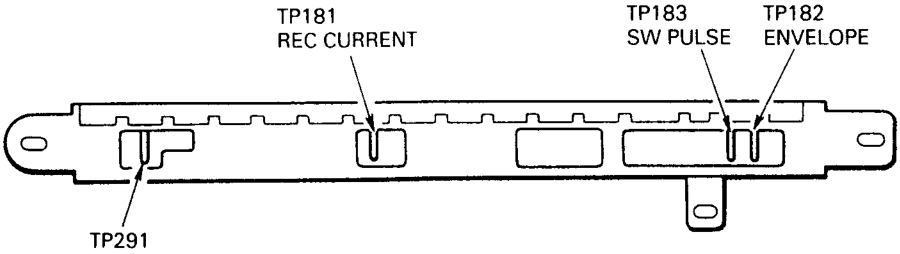

TP181
REC CURRENT
TP183
SW PULSE
TP182
ENVELOPE
TP291

Bild 2.3.1 VP-1 (Video-Vorverstärker)

2.4 ABGLEICH DER AUDIO SCHALTUNG

HINWEIS Verwenden Sie für Abgleicharbeiten an den Platinen CP-1 und AD-2 den Adapter (340295), da die flexiblen Kabel zum Anschluß der Platine AD-2 zu kurz sind. Schließen Sie das Flachbandkabel an CN271 (AD-2) und die andere Seite an CN251 auf Platine CP-1 an.

EINSTELLUNGEN VOR DEM ABGLEICH

- Der Audio-Eingang des Audio-Signalgenerators muß mit 600 Ohm abgeschlossen sein.
- Der Audio-Ausgang des Videorecorders muß mit 47 kOhm abgeschlossen sein (linker und rechter Kanal).
- Taste O/AV auf der Fernbedienung .... Stellung [AV]
- Taste AUDIO auf der Fernbedienung .... Stellung [L] und [R]
- Taste SP/LP auf der Fernbedienung .... Stellung [SP]
- Einsteller REC LEVEL (linker und rechter Kanal) .... Mittelstellung (eingerastet)
- Einsteller REC BALANCE .... Mittelstellung (eingerastet)

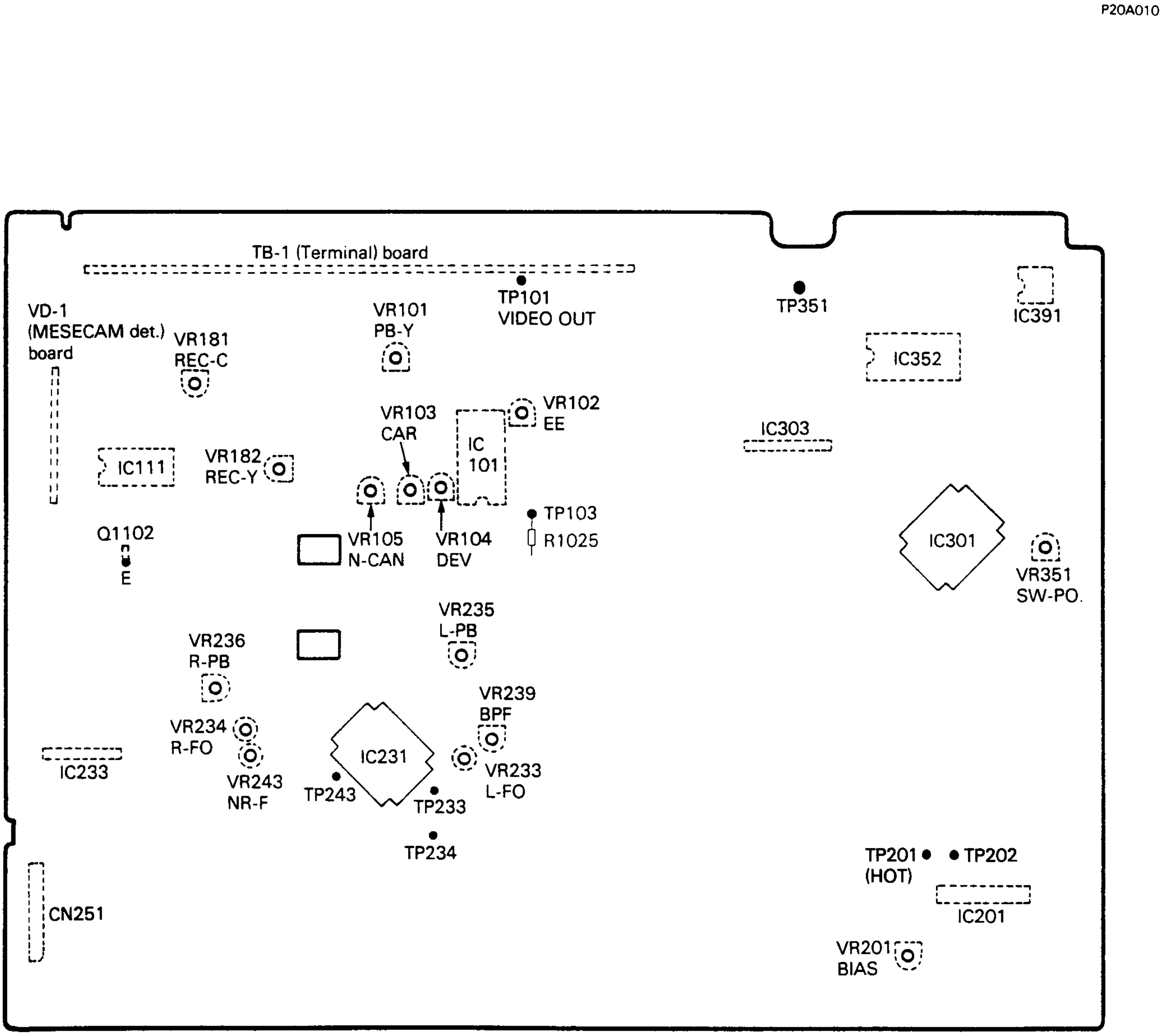
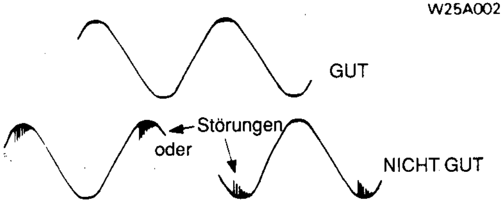

P20A010
TB-1 (Terminal) board
TP101
VIDEO OUT
TP351
IC391
VD-1
(MESECAM det.)
board
VR181
REC-C
VR101
PB-Y
IC352
VR103
CAR
VR102
EE
IC
101
IC303
IC111
VR182
REC-Y
TP103
R1025
Q1102
E
VR105
N-CAN
VR104
DEV
IC301
VR351
SW-PO.
VR235
L-PB
VR236
R-PB
VR239
BPF
VR234
R-FO
IC233
VR243
NR-F
IC231
TP243
TP233
VR233
L-FO
TP234
TP201
(HOT)
TP202
IC201
CN251
VR201
BIAS

Abb. 2.4.1 Platine CP-1 (Leiterbahnseite)

Hifi AUDIO SCHALTUNG .... PLATINE CP-1

HINWEIS (1): Der Abgleich des Hifi-AUDIO-Teiles erfolgt für den rechten und den linken Kanal getrennt. Die für den rechten Kanal geltenden Werte sind in Klammern angegeben.
(2): „Aufnahme ohne Signal“ bedeutet, daß an den Anschluß AUDIO INPUT kein Signal angelegt werden darf.

Nr.	Abgleich	Eingangssig.	Betriebsart	Meßpunkt	Lage	Anmerkung
1	A-FM-TRÄGER-FREQUENZ	Kein Signal	REC	TP233 (linker Kanal) TP234 (rechter Kanal)	VR233 (linker Kanal) VR234 (rechter Kanal)	1. Schließen Sie einen Frequenzzähler zwischen TP233 (TP234) und Masse an. 2. Stellen Sie VR233 (VR234) so ein, daß die Trägerfrequenz 1,4 MHz (1,8 MHz) +1/-9 kHz beträgt.
2	A-FM-BANDPASS-FILTER	Abgleich-kassette (340265)	PLAY	AUDIO OUTPUT CN167 Anschluß 3 (linker Kanal) Anschluß 1 (rechter Kanal)	VR239	 1. Schließen Sie ein Oszilloskop zwischen CN167 Anschluß 3 (Anschluß 1) und Masse an. 2. Spielen Sie die Abgleichkassette ab, und überprüfen Sie die Signalform des Audio-Ausgangs. 3. Stellen Sie VR239 ein, bis die Störungen auf beiden Kanälen minimal sind.
3	A-FM-NR FILTER	Audiosignal (5 kHz, -17 dBm) aus Audio-Signal-generator	E-E	TP243	VR243	1. Stellen Sie VR243 so ein, daß der Ausgangspegel minimal ist.
4	A-FM WIEDER-GABEPEGEL	Abgleich-kassette (340162)	PLAY	AUDIO OUTPUT CN167 Anschluß 3 (linker Kanal) Anschluß 1 (rechter Kanal)	VR235 (linker Kanal) VR236 (rechter Kanal)	1. Stellen Sie VR235 (VR236) so ein, daß der Wiedergabepegel -7 ± 0,5 dBm beträgt.

AUDIO SCHALTKREIS ..... PLATINE CP-1

HINWEIS (1): „Aufnahme ohne Signal“ bedeutet, daß an den Anschluß AUDIO INPUT kein Signal angelegt werden darf.
(2): Schalten Sie den AUDIO-Ausgangswahlschalter in die Stellung Mono (keine Anzeige/siehe Bedienungsanleitung).

Nr.	Abgleich	Eingangssig.	Betriebsart	Meßpunkt	Lage	Anmerkung
1	VORMAGNE-TISIERUNGS-PEGEL	Kein Signal	REC	TP201 (Hot) TP202 (CP-1 PCB)	VR201 (CP-1 PCB)	1. Führen Sie in der AV-Stellung eine Aufnahme ohne Signal durch. 2. Stellen Sie im REC MODE VR201 so ein, daß der Pegel 20 ± 1 mVeff beträgt. 3. Überprüfen Sie die Vormagnetisierungsfrequenz von 70 ± 5 kHz.

2.5 ABGLEICH DER LEVEL-METER ... PLATINE CP-1 und AD-2

HINWEIS: Verwenden Sie für Abgleicharbeiten an den Platinen CP-1 und AD-2 den Adapter (340295).

Nr.	Abgleich	Eingangssig.	Betriebsart	Meßpunkt	Lage	Anmerkung
1	AUDIO-PEGEL-MESSER	Audiosignal (1 kHz, -7 dBm) vom Audio-Signal-generator	E-E	AUDIO OUTPUT CN167 Anschluß 3 (linker Kanal) Anschluß 1 (rechter Kanal) (Platine CP-1)	VR241 (linker Kanal) VR242 (rechter Kanal) (Platine AD-2)	1. Schalten Sie den Videorecorder in den AV und Hifi L+R Modus. Sie gelangen in diesen Modus, indem Sie die Fernbedienungstasten CH/AV und dann Audio drücken. Im Anzeigenfeld des Videorecorders leuchtet jetzt AV und Audio L+R auf. 2. Stellen Sie den Schalter für die Pegelanzeige auf „Level". 3. Verbinden Sie einen Audio-Signalgenerator mit dem Anschluß AUDIO INPUT. 4. Verbinden Sie das AC-Voltmeter mit dem Anschluß AUDIO OUTPUT. 5. Stellen Sie den Einsteller AUDIO REC LEVEL so ein, daß der Pegel des Audio-Ausgangssignals -7,0 dBm beträgt. 6. Der Abgleich erfolgt mit den Poti's VR241/VR242, mit denen Sie einen LED-Pegel von -4 dB einstellen müssen. 7. Stellen Sie nun einen Audio Output Signal Level von -7,5 dBm am Audio-Ausgang (EURO-AV) ein. 8. Nun muß sichergestellt sein, daß nur die -4 dB LED's erlöschen.

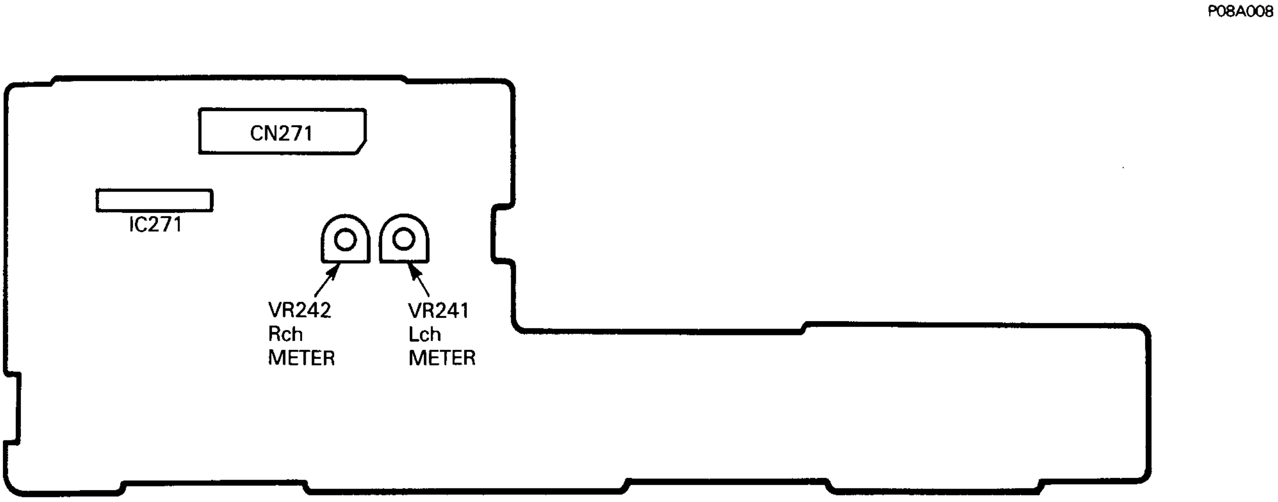


Abb. 2.5.1 Platine AD-2 (Bestückungsseite)

2.6 ABGLEICH DES MTS-DECODER (Multiplex TV System) ..... PLATINE TN-3

Nr.	Abgleich	Eingangssig.	Betriebsart	Meßpunkt	Lage	Anmerkung
1	STEREO-KANAL-TRENNUNG	Audiosignal (r. Kanal..1 kHz 100% mod. l. Kanal.400 Hz unmod.) vom Audio-MPX TV-Signal-generator	E-E	AUDIO OUTPUT CN852 Anschluß 10 (linker Kanal) (Platine CP-1)	VR631	1. Schalten Sie das Pilotsignal (54,68 kHz) für den Stereobetrieb ein. Legen Sie ein Signal mit 1 kHz und 100% Modulation an den rechten Kanal, während der linke Kanal unmoduliert ist. 2. Schließen Sie ein Oszilloskop an den Audio-Ausgang (linker Kanal) an, und stellen Sie VR631 auf minimales Signal (Spitze-Spitze).
2	STEREO-(117,5 Hz)	Fernseh-sendung (Stereo)	E-E	IC631 Anschluß 5	VR632	1. Stellen Sie ein Stereo-Fernsehprogramm ein. 2. Stellen Sie VR632 so ein, daß das Signal maximal wird.
3	ZWEI-SPRACHIGE PRO-GRAMME (274,1 Hz)	Fernseh-sendung (zwei sprachig)	E-E	IC631 Anschluß 6	VR633	1. Stellen Sie ein zweisprachiges Fernsehprogramm ein. 2. Stellen Sie VR633 so ein, daß das Signal maximal wird.

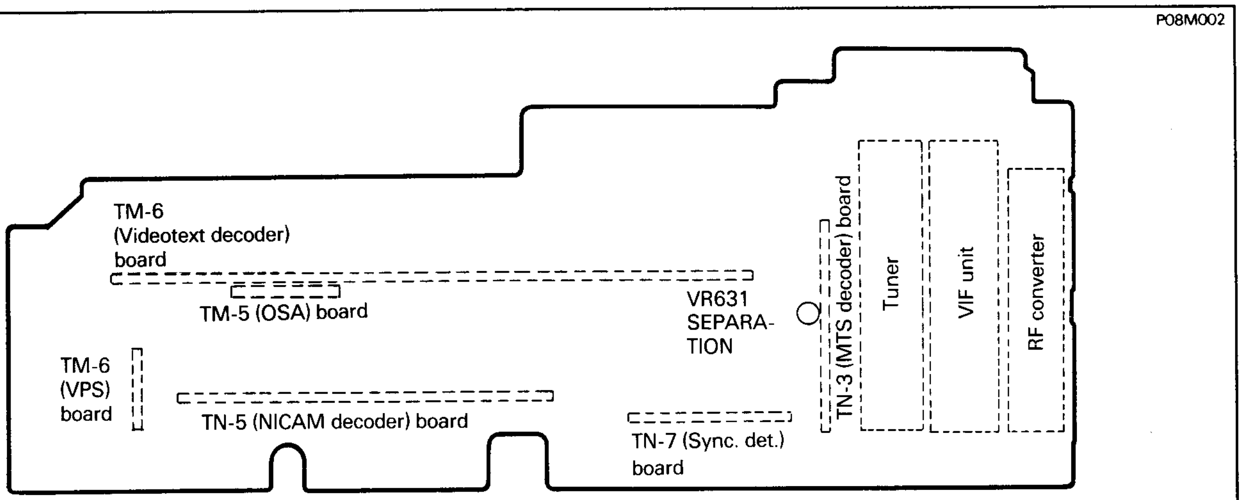

P08M002
TM-6 (Videotext decoder) board
TM-5 (OSA) board
VR631 SEPARATION
TN-3 (MTS decoder) board
Tuner
VIF unit
RF converter
TM-6 (VPS) board
TN-5 (NICAM decoder) board
TN-7 (Sync. det.) board

Abb. 2.6.1 Platine CP-2 (Leiterbahnseite)

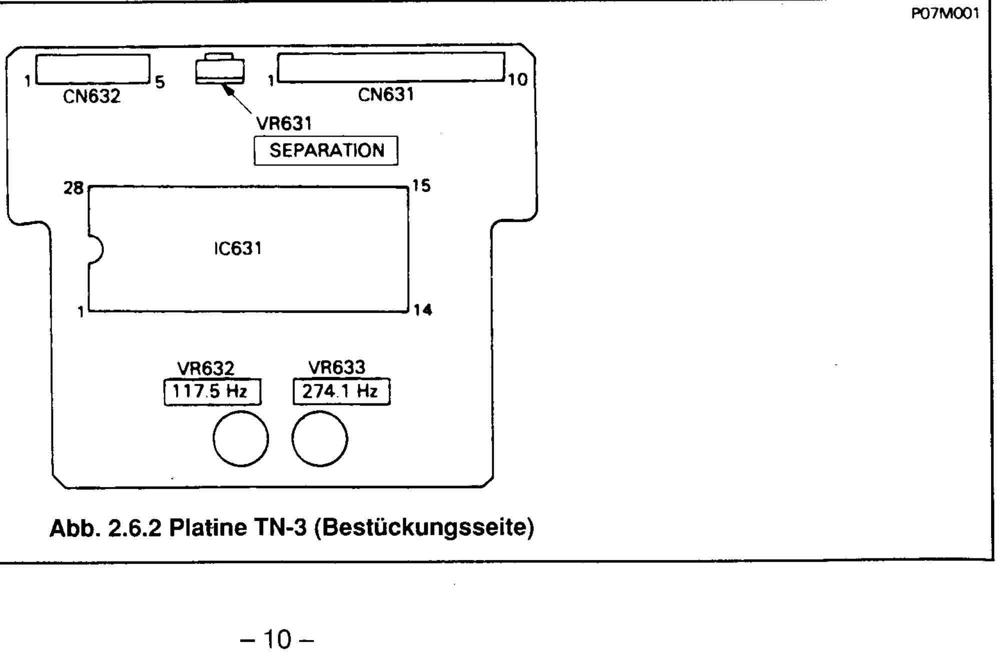

P07M001
1
CN632
5
1
CN631
10
VR631
SEPARATION
28
15
IC631
1
14
VR632
117.5 Hz
VR633
274.1 Hz

Abb. 2.6.2 Platine TN-3 (Bestückungsseite)

2.7 ABGLEICH DER VIDEOTEXT-DECODERSCHALTUNG .... PLATINE TM-6 und VD-2

Nr.	Abgleich	Eingangssig.	Betriebsart	Meßpunkt	Lage	Anmerkung
1	DECODER VXO	KEIN SIGNAL	E-E	Emitter von Q1102 (Platine VD-2) Abb. 2.4.1	CT761	1. Stellen Sie die Empfindlichkeit (VOLTAGE/ DIV) des Oszilloskops auf 10 mV/Div. 2. Schließen Sie den Frequenzzähler über einen Vorverstärker des obigen Oszilloskops an den Emitter von Q1102 und an Masse an. 3. Drücken Sie die Taste „MENU“ auf der Fernbedienung. 4. Stellen Sie CT761 so ein, daß die Frequenz 4433619 ± 20 Hz beträgt.

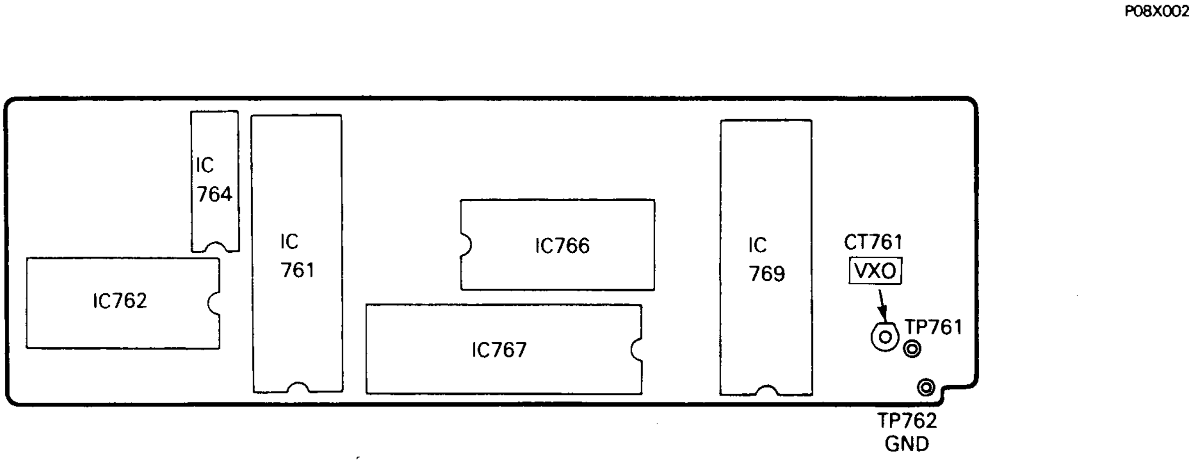


Abb. 2.7.1 Platine TM-6 (Bestückungsseite)

2.8 ABGLEICH DES TUNER ZF-SCHALTKREISES ... ZF-Stufe

Nr.	Abgleich	Eingangssig.	Betriebsart	Meßpunkt	Lage	Anmerkung
1	RF AGC	Fernsehsendung	E-E	Fernsehbildschirm	VR611	1. Drehen Sie VR611 in die Richtung, in der Rauschen auf dem Bildschirm erscheint. Anschließend drehen Sie in die entgegengesetzte Richtung soweit zurück, bis das Rauschen verschwindet.

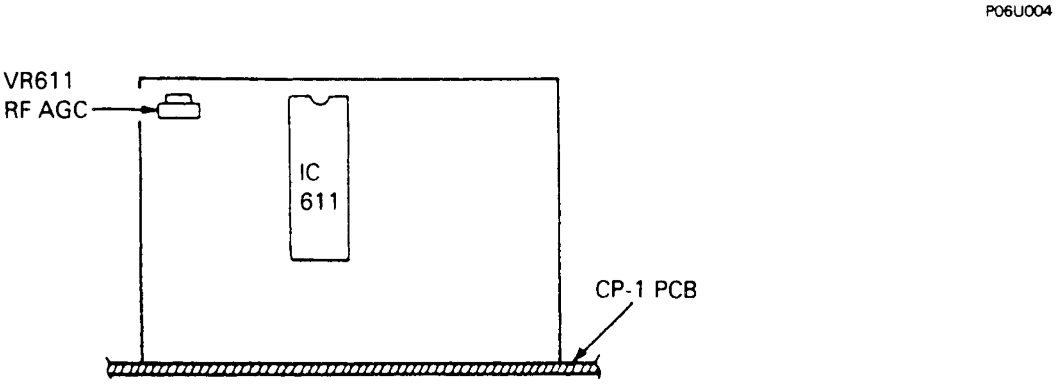
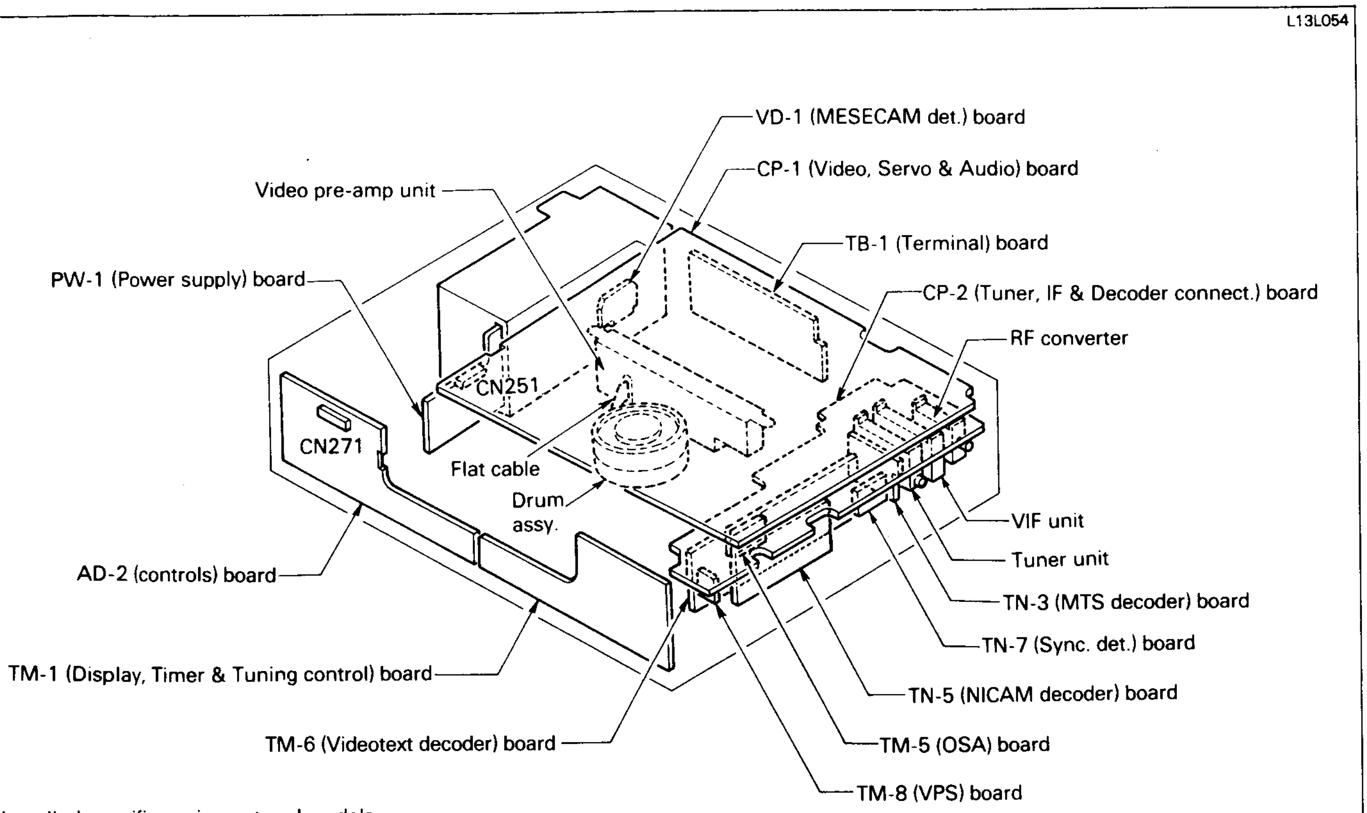


Abb. 2.8.1 ZF-Baugruppe (Bestückungsseite)

1. CIRCUIT BOARD LOCATIONS

1-1. MAIN BOARDS


L13L054
VD-1 (MESECAM det.) board
CP-1 (Video, Servo & Audio) board
Video pre-amp unit
TB-1 (Terminal) board
PW-1 (Power supply) board
CP-2 (Tuner, IF & Decoder connect.) board
RF converter
CN251
CN271
Flat cable
Drum assy.
VIF unit
Tuner unit
AD-2 (controls) board
TN-3 (MTS decoder) board
TN-7 (Sync. det.) board
TM-1 (Display, Timer & Tuning control) board
TN-5 (NICAM decoder) board
TM-6 (Videotext decoder) board
TM-5 (OSA) board
TM-8 (VPS) board

Installed specific equipment and models.
TN-5 (NICAM decoder) board: FM 706 N1 only.
TM-5 (OSA: on screen assist) board: FM 706 Q1 and N1.
TM-6 (Videotext decoder) board: FM 706 V1 only.
TM-8 (VPS) board: FM 706 Q1 and V1.

Fig. 1-1

1-2. LOCATION FOR TAPE PATH ADJUSTMENT

NOTE: Test point TP182 and TP183 for tape path adjustment is shown in figure below.
For adjustment, refer to the separate volume "MECHANISM DESCRIPTION & ADJUSTMENT" Ident-No.: 53 5433.

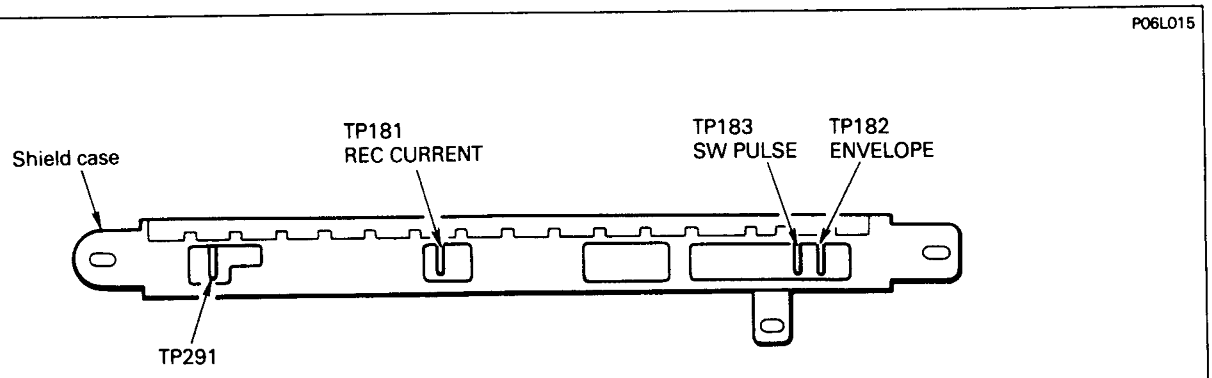

P06L015
TP181
REC CURRENT
TP183
SW PULSE
TP182
ENVELOPE
Shield case
TP291

Fig. 1-2 Pre-amp unit

2. ELECTRICAL ADJUSTMENT

2-1. PREPARATION

2-1-1. EQUIPMENT

- Colour TV monitor
- PAL Colour-bar generator (with RF and LINE OUTPUT)
- PAL TV test signal generator (Multi-burst signal with colour burst)
- Audio signal generator
- Oscilloscope (dual trace; frequency response 10 MHz or more, probe: 10:1)
- Frequency counter (countable to 10 MHz or higher)
- Digital voltmeter
- AC voltmeter
- In/output probes
- Alignment cassette (340158) PAL Colour bar 1 KHz
- Alignment cassette (340157) Monoscope 6 KHz
- Alignment cassette (340165) Check for D.O.C.
- Alignment cassette (340163) PAL Monoscope 6 KHz, PAL Colour-bar 1 KHz, SECAM Colour-bar 1 KHz, PAL RF Sweep MESECAM Colour-bar 1 KHz, NTSC Colour-bar 1 KHz.
- Alignment cassette (340265) PAL colour bar HiFi BPF
- Alignment cassette (340162) AF level colour bar 1 KHz
- Relay jig (340296) 12/7-wire cable for Pre-amp unit
  Connect the Flat cable end from the Drum assembly to the Pre-amp unit using the Relay jig to provide simple repairing and adjustment of the Pre-amp unit, as shown in Fig. 2-1-1. Further, when adjusting the Pre-amp unit, be sure to make contact an end of Shield case with Bracket of the Pre-amp unit to maintain the shield effect.
- Relay jig (340295) for AD-2 board
  Connect the Flat cable end to CN251 of the CP-1 board and other end to CN271 of the AD-2 board using the Relay jig (Shown in Fig. 2-1-2) to provide simple repairing and adjustment of the AD-2 board.

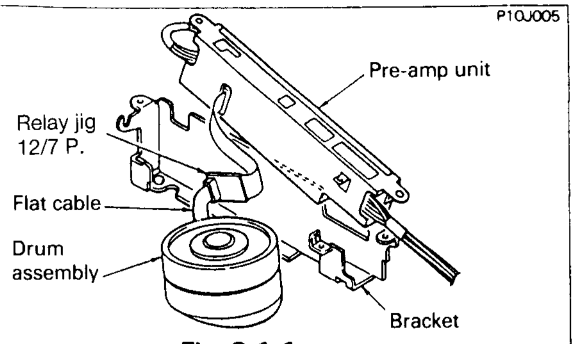


Fig. 2-1-1

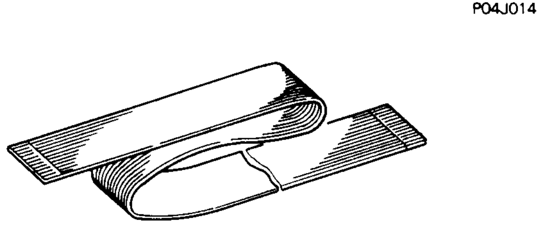


Fig. 2-1-2

2-1-2. SET-UP

Because the RF input signal is used for circuit adjustments, connect the colour-bar generator to the ANT IN terminal of the VCR. The RF input signal is processed by the tuner and IF circuit. It is important that the video output signal of the IF circuit satisfies the items shown in Fig. 2-1-3. Connect the oscilloscope to the VIDEO OUTPUT terminal of the video circuit and terminate with a 75Ω load, and then check the video output signal.

- The amplitude of the sync signal should be approximately 0.3 Vp-p.
- The amplitude of the video signal should be approximately 0.7 Vp-p.
- While observing the oscilloscope or TV screen, make fine-tuning adjustments so that the colour burst amplitude is approximately 0.3 Vp-p.
- Check to be sure that there is no spike noise in the sync part of the horizontal sync signal.

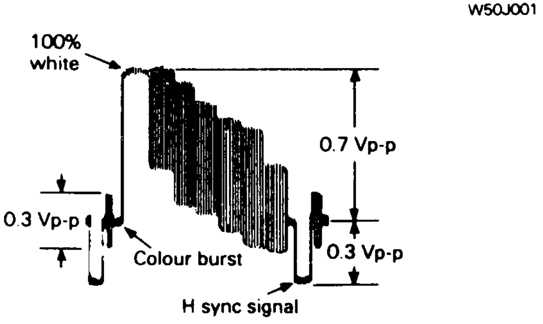
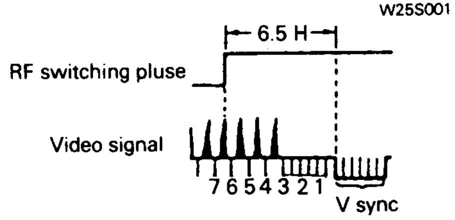


Fig. 2-1-3

2-2. SERVO CIRCUIT ADJUSTMENT ..... CP-1 board and VP-1 Pre-amp unit

NOTE (1) : These adjustments should be carried out upon completion of the transport adjustments.
(2) : If the tape transport adjustments are carried out after these adjustments, follow the procedures again in SWITCHING POSITIONS.

No.	Item	Input	Mode	Point	Location	Remark
1	SWITCHING POSITION	Alignment cassette (340157)	PLAY	VIDEO OUTPUT TP101 RF SW pulse TP351 (CP-1 board)	VR351	 W25S001 6.5 H RF switching pluse Video signal 7 6 5 4 3 2 1 V sync 1. Turn VR351 fully clockwise (seeing from the foil side) in the STOP mode. 2. Set the tracking control position to the center. (Tracking center position display in the indicator panel "T —:— ") 3. Play back the test tape and adjust VR351 so that the phase of the leading edge of the vertical sync signal is delayed 6.5 ± 0.5 H from the rise of the RF switching pulse waveform. 4. If the adjustment value does not changed by adjustment, repeat steps 1 through 3.
2	STILL V-LOCK for SP MODE	Colour bar from Colour bar generator	REC (SP) ↓ PLAY (SP) ↓ STILL (SP)	TV screen	Tracking control buttons (Front panel)	1. Put the VCR in the REC (SP) mode and record at the middle of the cassette tape. 2. Playback the recorded part, and put the VCR in the STILL (SP) mode. 3. Press the (+) or (–) tracking control buttons until V jitter (very fine movement of the vertical sync) is minimized.

P16S036

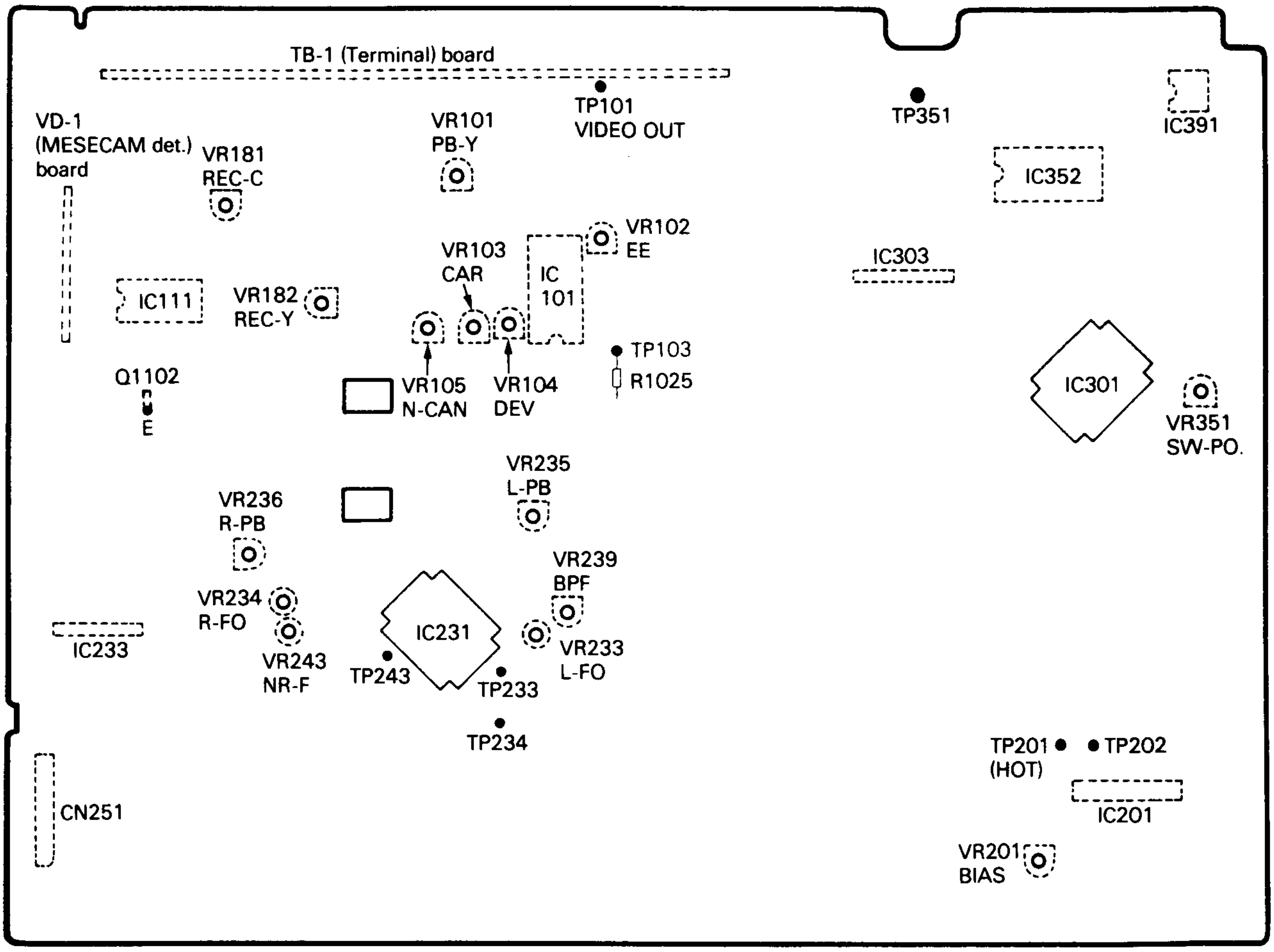
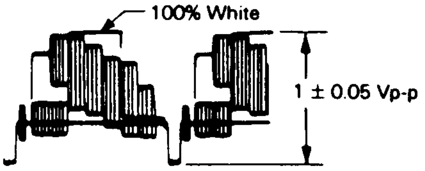
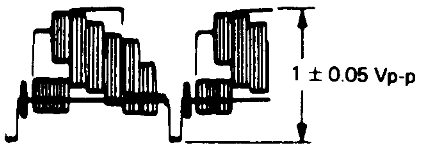
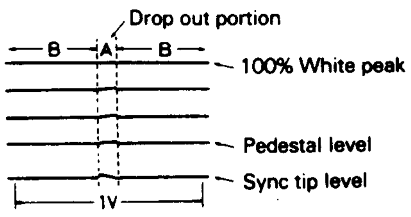
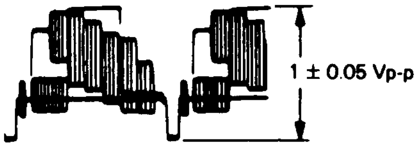
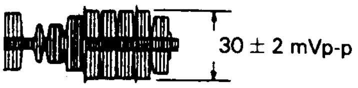
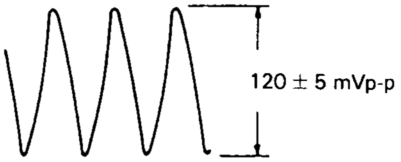

TB-1 (Terminal) board
TP101
VIDEO OUT
TP351
IC391
VD-1
(MESECAM det.)
board
VR181
REC-C
VR101
PB-Y
IC352
VR102
EE
VR103
CAR
IC
101
IC303
IC111
VR182
REC-Y
TP103
R1025
Q1102
E
VR105
N-CAN
VR104
DEV
IC301
VR351
SW-PO.
VR235
L-PB
VR236
R-PB
VR239
BPF
VR234
R-FO
IC231
VR233
L-FO
IC233
VR243
NR-F
TP243
TP233
TP234
TP201
(HOT)
TP202
IC201
CN251
VR201
BIAS

Fig. 2-2-1 CP-1 board (Foil side view)

2-3. VIDEO CIRCUIT ADJUSTMENT ... CP-1 board and Video pre-amp unit

NOTE (1) : Use the Relay jig mentiond in the 2-1. PREPARATION to provide easy adjustment of the Pre-amp unit.
(2) : Before these adjustments place the unit in the SP mode.
(3) : When adjustment No. 1, No. 2 and No. 5 below, terminate VIDEO OUTPUT TP101 at 75 ohms.
(4) : 'No-signal REC mode' is not to supply any signal to VIDEO INPUT terminal.

No.	Item	Input	Mode	Point	Location	Remark
1	E-E LEVEL	Colour bar (100% white level) from Colour bar generator	E-E	VIDEO OUTPUT TP101 (CP-1 board)	VR102	W25V001  1. Adjust VR102 so that the level is 1.00 ± 0.05 Vp-p.
2	PB-Y LEVEL	Alignment cassette (340158)	PLAY	VIDEO OUTPUT TP101 (CP-1 board)	VR101	W20V003  1. Adjust VR101 so that the level is 1.00 ± 0.05 Vp-p.
3	N-CAN LEVEL (Drop-out)	Alignment cassette (340165)	PLAY	VIDEO OUTPUT TP101 (CP-1 board)	VR105	W30V012  Drop out portion B A B 100% White peak Pedestal level Sync tip level 1V 1. Set the horizontal scale (TIME/DIV) of the oscilloscope to 1 msec./div.. 2. Adjust VR105 so that the drop out portion "A" of white peak (100%) and other portion "B" are same level.
4	CARRIER SET	No-signal	REC	TP103 (CP-1 board)	VR103	1. Set the channel selector buttons to the AV position and put the VCR in the no-signal REC mode. 2. Adjust VR103 so that the frequency is 3.8 ± 0.05 MHz.
5	DEVIATION	Colour bar (100% white level) from Colour bar generator	REC (Adjustment) ↓ PLAY (Check)	VIDEO OUTPUT TP101 (CP-1 board)	VR104	W20W003  1. Insert the blank tape to the VCR and record colour bar signal. 2. Playback the recorded part, and check that the level is 1.00 ± 0.05 Vp-p. 3. Repeat adjust VR104 before the record, and the playback it, if not satisfactory.

No.	Item	Input	Mode	Point	Location	Remark
6	C REC CURRENT	Colour bar from Colour bar generator	REC	TP181 (HOT) shield case (GND) (Video pre-amp unit)	VR181 (CP-1 board)	W15V006  1. Rotate VR182 so that the luminance level is minimize. 2. Adjust VR181 so that the level is 30 ± 2 mVp-p.
7	Y REC CURRENT	No-signal	REC	TP181 (HOT) shield case (GND) (Video pre-amp unit)	VR182 (CP-1 board)	W20V007  1. Set the channel selector buttons to AV position and put the VCR in the no-signal REC mode. 2. Adjust VR182 so that the level is 120 ± 5 mVp-p. 3. Follows are the applicable models and their corresponding mark.

P60V015

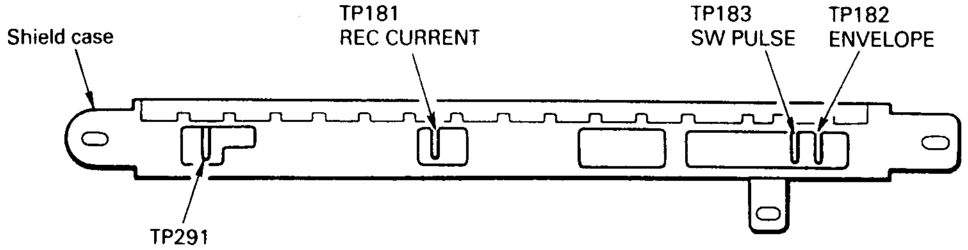

Shield case
TP181
REC CURRENT
TP183
SW PULSE
TP182
ENVELOPE
TP291

Fig. 2-3-1 Video pre-amp unit

2-4. AUDIO CIRCUIT ADJUSTMENT

NOTE: When repairing and adjusting the CP-1 board and AD-2 board, use the optionally supplied Relay jig (340295) since the flexible PCB for connecting to the AD-2 board is short. Connect the Flat cable end to CN271 on the AD-2 board and other end to CN251 on the CP-1 board.

SETTING BEFORE ADJUSTMENT

- The audio input terminal of the audio signal generator should be terminated at 600 ohms.
- The audio output terminal of the VCR should be terminated at 47 killo ohms (L ch and R ch).
- 0/AV button on the remote control . . . . [AV] position.
- AUDIO output button on the remote control . . . . [L] and [R] position.
- SP/LP select button on the remote control . . . . [SP] position.

P16A018

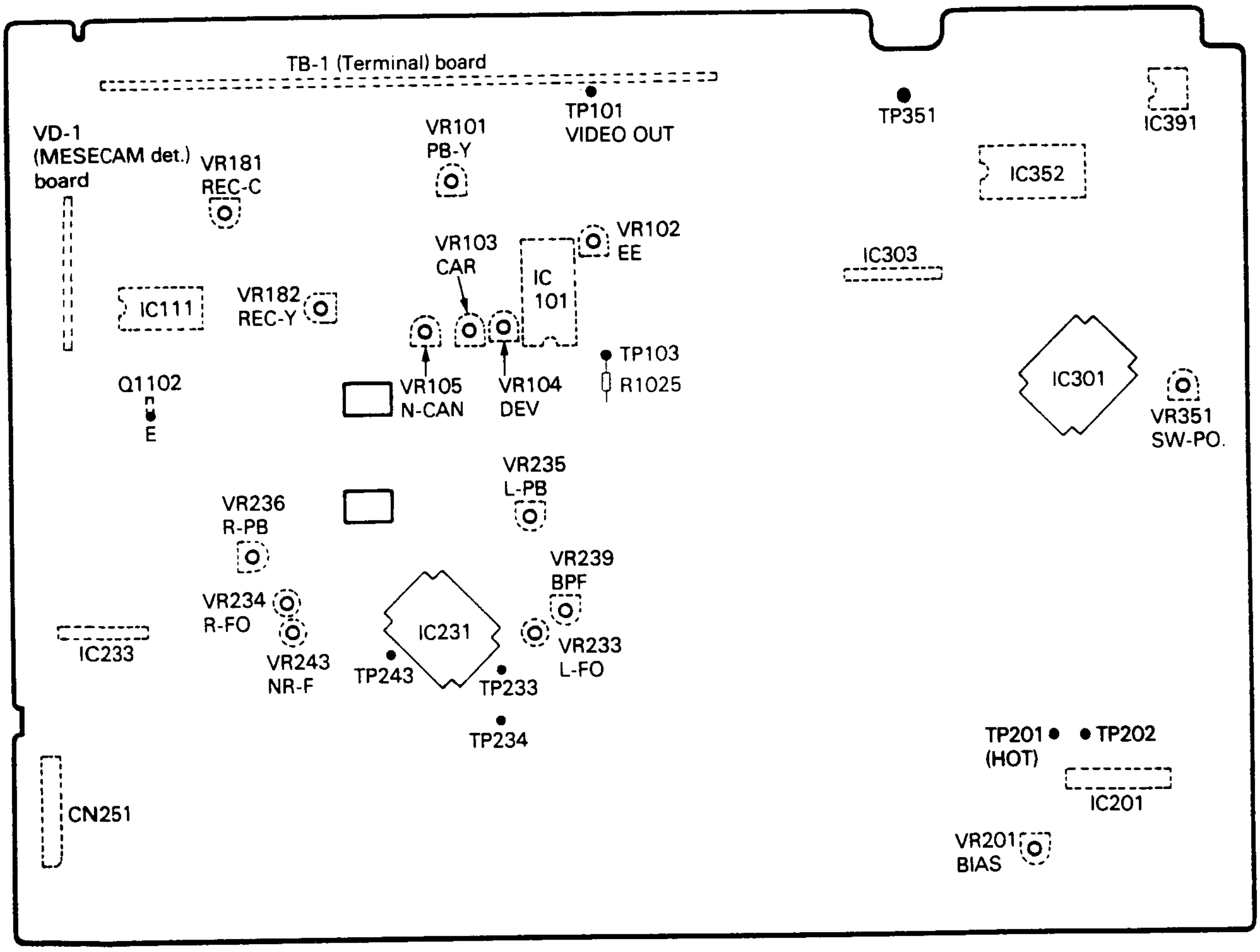
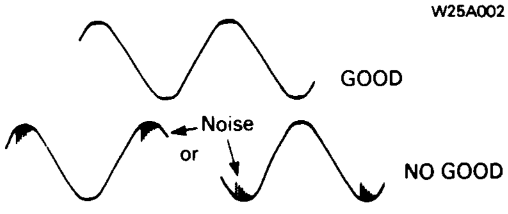

TB-1 (Terminal) board
TP101
VIDEO OUT
TP351
IC391
VD-1
(MESECAM det.)
board
VR181
REC-C
VR101
PB-Y
IC352
VR103
CAR
IC
101
VR102
EE
IC303
IC111
VR182
REC-Y
TP103
R1025
IC301
VR351
SW-PO.
Q1102
E
VR105
N-CAN
VR104
DEV
VR235
L-PB
VR236
R-PB
VR239
BPF
VR234
R-FO
VR243
NR-F
IC231
VR233
L-FO
IC233
TP243
TP233
TP234
TP201
(HOT)
TP202
IC201
CN251
VR201
BIAS

Fig. 2-4-1 CP-1 board (Foil side view)

Hi-Fi AUDIO CIRCUIT .... CP-1 board

NOTE (1): The Hi-Fi AUDIO section adjustment has separate adjustment items for the L ch and R ch.
The R ch adjustments are included in parentheses.
(2): 'No-signal record mode' is not to supply any signal to the AUDIO INPUT terminal.

No.	Item	Input	Mode	Point	Location	Remark
1	A-FM CARRIER FREQUENCY	No-signal	REC	TP233 (L ch) TP234 (R ch)	VR233 (L ch) VR234 (R ch)	1. Connect a frequency counter to TP233 (TP234) and ground. 2. Adjust VR233 (VR234) so that the carrier frequency is 1.4 MHz (1.8 MHz) +1/–9 KHz.
2	A-FM BPF	Alignment cassette (340265)	PLAY	AUDIO OUTPUT terminals (L ch, R ch)	VR239 L ch (R ch)	 1. Connect a oscilloscope to AUDIO OUTPUT L ch (R ch) terminal. 2. Playback the alignment cassette and observe the waveform on the audio output. 3. Adjust VR239 until the noise component of both channel is minimum level.
3	A-FM NR FILTER	Audio signal (5 KHz, -17 dBm) from Audio signal generator	E-E	TP243	VR243	1. Adjust VR243 so that the output level is minimum.
4	A-FM PB LEVEL	Alignment cassette (340162)	PLAY	AUDIO OUTPUT terminals (L ch, R ch)	VR235 (L ch) VR236 (R ch)	1. Adjust VR235 (VR236) so that the playback level is –7 ± 0.5dBm.

NORMAL AUDIO CIRCUIT ..... CP-1 board

NOTE (1): 'No-signal record mode' is not to supply any signal to the AUDIO INPUT terminal.
(2): Press the AUDIO output select button to the Mono (No indication) position.

No.	Item	Input	Mode	Point	Location	Remark
1	BIAS LEVEL	No-signal	REC	TP201 (HOT) TP202	VR201	1. Set the channel selector buttons to the AV position and put the VCR in the no-signal REC mode. 2. Adjust VR201 so that the level is 24 mVrms. 3. Confirm that the bias frequency is 70 ± 5 KHz.

2-5. LEVEL METER CIRCUIT ADJUSTMENT ... CP-1 and AD-2 board

NOTE: When repairing and adjusting the CP-1 board and AD-2 board, use the optionally supplied Relay jig (340295) since the flexible PCB for connecting to the AD-2 board is short. Connect the Flat cable end to CN271 on the AD-2 board and other end to CN251 on the CP-1 board.

No.	Item	Input	Mode	Point	Location	Remark
1	AUDIO LEVEL METER	Audio signal (1 KHz, -7 dBm) from Audio signal generator	E-E	AUDIO OUTPUT terminals (L ch, R ch)	VR241 (L ch) VR242 (R ch) (AD-2 board)	1. Connect an audio signal generator to AUDIO INPUT terminals. 2. Connect the AC voltmeter to the AUDIO OUTPUT terminals. 3. Press the "0/AV" button on the remote control unit to the AV position. 4. Press the AUDIO output button on the remote control unit to the "Lch" and "Rch" position. 5. Set the output of audio signal generator so that the AUDIO OUTPUT signal level is -7.0dBm. 6. Adjust VR241 and VR242 so that illuminates the -4dB LED. 7. Set the output of audio signal generator so that the AUDIO OUTPUT signal level is -7.5dBm. 8. Adjust VR241 and VR242 so that confirm only the -4dB LED goes out.

P08A017

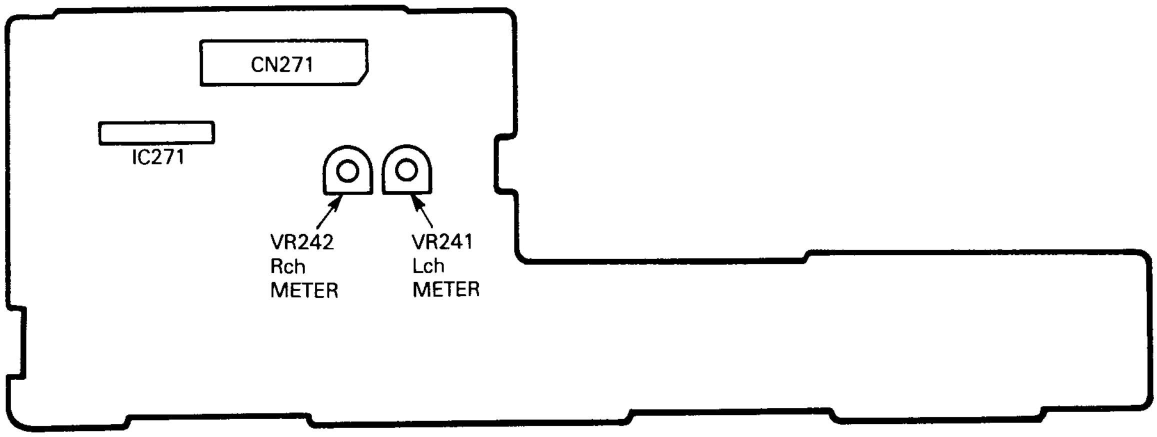


Fig. 2-5-1 AD-2 board (Parts side view)

2-6. MTS (Multiplex TV System) DECODER CIRCUIT ADJUSTMENT ... TN-3 board

No.	Item	Input	Mode	Point	Location	Remark
1	STEREO SEPARATION	Audio signal (R ch...1 KHz 100% mod. L ch...400Hz unmod.) from Audio MPX TV signal generator	E-E	AUDIO OUTPUT terminal (L ch)	VR631	1. Set the pilot signal for the stereo mode. With the L ch unmodulated, provide 1 KHz 100% modulation on the R ch. 2. Connect an oscilloscope to the audio output terminal (L ch) and adjust VR631 for minimum waveform peak-to-peak value.
2	STEREO (117.5 Hz)	TV broadcast (Stereo)	E-E	IC631 pin 5	VR632	1. Select the TV channel to stereo programme. 2. Adjust VR632 so that the waveform is maximize.
3	BILINGUL (274.1 Hz)	TV broadcast (Bilingul)	E-E	IC631 pin 6	VR633	1. Select the TV channel to bilingul programme. 2. Adjust VR633 so that the waveform is maximize.

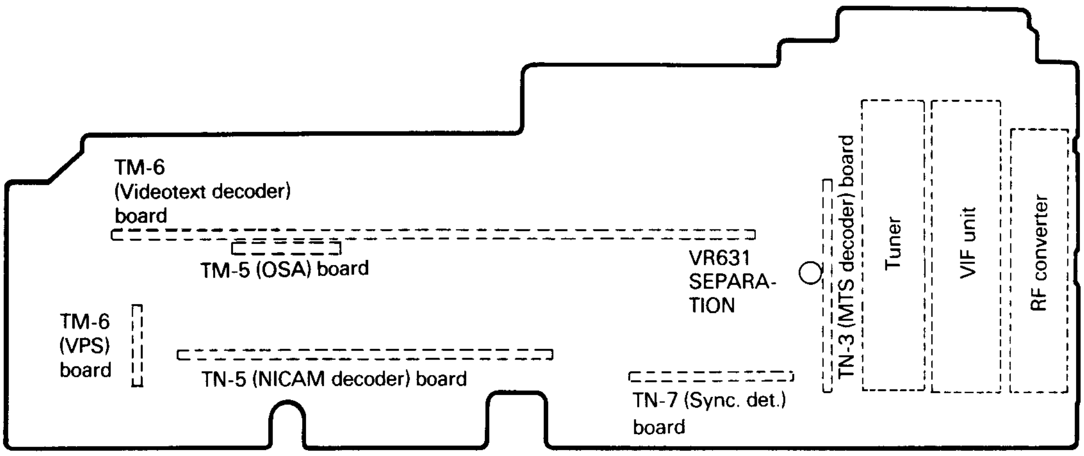

P08M007
TM-6 (Videotext decoder) board
TM-5 (OSA) board
TM-6 (VPS) board
TN-5 (NICAM decoder) board
VR631 SEPARATION
TN-7 (Sync. det.) board
TN-3 (MTS decoder) board
Tuner
VIF unit
RF converter

Fig. 2-6-1 CP-2 board (Foil side view)

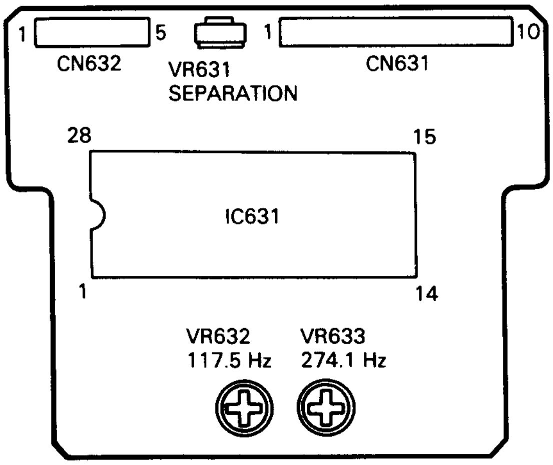

P07M004
1
5
CN632
VR631 SEPARATION
1
10
CN631
28
15
IC631
1
14
VR632 117.5 Hz
VR633 274.1 Hz

Fig. 2-6-2 TN-3 board (Parts side view)

2-7. VIDEO TEXTDECODER CIRCUIT ADJUSTMENT ... TM-6 and CP-1 board

No.	Item	Input	Mode	Point	Location	Remark
1	DECODER VXO	NONE	E-E	Emitter of Q1102 (CP-1 board) Fig. 2-2-1	CT761	1. Set the vartical scale (VOLTAGE/DIV.) of the oscilloscope to 10 mV/DIV.. 2. Connect the frequency counter to Emitter of Q1102 and ground through a pre-amp of the above oscilloscope. 3. Press the "MENU" button on the remote control unit. 4. Adjust CT761 so that the frequency is 4433619 ± 20Hz.

P08X003

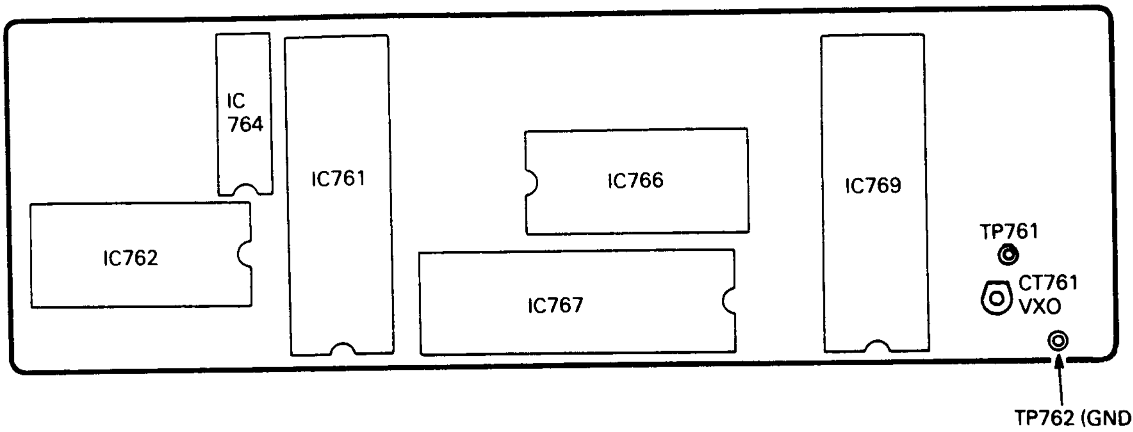

IC 764
IC761
IC766
IC769
IC762
IC767
TP761
CT761 VXO
TP762 (GND)

Fig. 2-7-1 TM-6 board (Parts side view)

2-8. TUNER IF CIRCUIT ADJUSTMENT ... VIF unit

No.	Item	Input	Mode	Point	Location	Remark
1	RF AGC	TV broadcast	E-E	TV screen	VR611	1. Turn VR611 in the direction which causes snow to appear, then in the opposite direction until the show just disappears.

P06U004

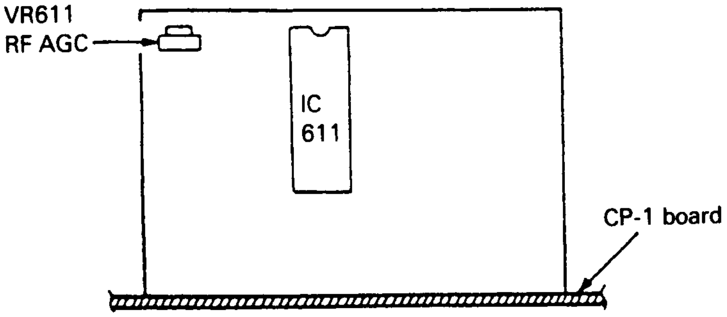

VR611
RF AGC
IC 611
CP-1 board

Fig. 2-8-1 VIF unit (Parts side view)

SIEMENS

VIDEORECORDER FM706Q1
FM706V1

SCHALTPLÄNE + PLATINEN
Block diagram, Circuit diagram & Printed circuit boards

INHALTSVERZEICHNIS
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MECHANISM CONNECTION CIRCUIT 3
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AUDIO BLOCK DIAGRAM 7
SYSTEM CONTROL & SERVO BLOCK DIAGRAM 10
PW-1 NETZTEIL / POWER SUPPLY 13
CP-1 (PW-A) NETZTEIL / POWER SUPPLY 15
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Ausgabe: 9150
Issue

Änderungen vorbehalten
Subject to modifications

Ident-Nr. 53 5438

(D) Sicherheitsbestimmungen

Nach Servicearbeiten ist bei Geräten der Schutzklasse II die Messung des Isolationswiderstandes und des Ableitstromes bei eingeschaltetem Gerät nach **VDE 0701 / Teil 200** bzw. der am Aufstellort geltenden Vorschrift, durchzuführen!
Dieses Gerät entspricht der Schutzklasse II, erkennbar durch das Symbol ⧈ .

- **Messen des Isolationswiderstandes nach VDE 0701.**
  Isolationsmesser (U_{Test} = 500 V-) gleichzeitig an beiden Netzpolen und zwischen allen Gehäuse- oder Funktionsteilen (Antenne, Buchsen, Tasten, Zierteilen, Schrauben, usw.) aus Metall oder Metallegierungen anlegen. Fehlerfrei ist das Gerät bei einem:
  $R_{Isol} \geq 2\ M\Omega$ bei U_{Test} = 500 V-
  Meßzeit: ≥ 1 s (Fig. 1)

Anmerkung: Bei Geräten der Schutzklasse II kann durch Entladungswiderstände der Meßwert des Isolationswiderstandes konstruktionsbedingt < 2 MΩ sein. In diesen Fällen ist die Ableitstrommessung maßgebend.

- **Messen des Ableitstromes nach VDE 0701.**
  Ableitstrommesser (U_{Test} =220 V≈) gleichzeitig an beiden Netzpolen und zwischen allen Gehäuse- oder Funktionsteilen (Antenne, Buchsen, Tasten, Zierteilen, Schrauben, usw.) aus Metall oder Metallegierungen anlegen. Fehlerfrei ist das Gerät bei einem:
  $I_{Ableit} \leq 1$ mA bei U_{Test} = 220V ≈ / Meßzeit ≥ 1 s (Fig. 2)
- Wir empfehlen die Messungen mit dem **METRATESTER 3** durchzuführen. (Meßgerät zur Prüfung elektrischer Geräte nach VDE 0701).

  Metrawatt GmbH
  Geschäftsstelle Bayern
  Triebstr. 44
  D 8000 München 50
- Ist die Sicherheit des Gerätes nicht gegeben, weil
  - eine Instandsetzung unmöglich ist,
  - oder der Wunsch des Benützers besteht, die Instandsetzung nicht durchführen zu lassen, so muß dem Betreiber die vom Gerät ausgehende Gefahr schriftlich mitgeteilt werden.

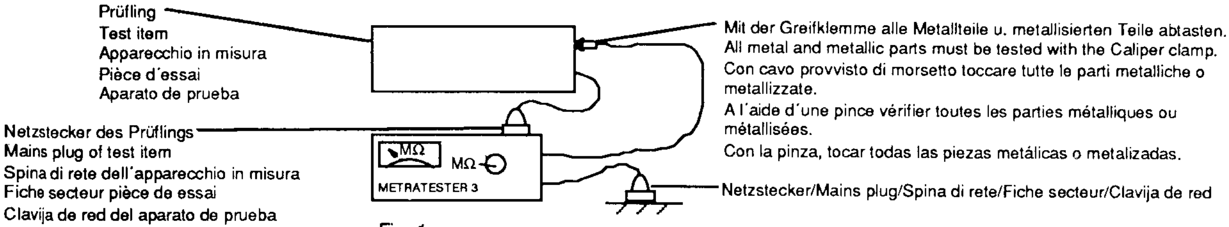

Prüfling
Test item
Apparecchio in misura
Pièce d'essai
Aparato de prueba
Netzstecker des Prüflings
Mains plug of test item
Spina di rete dell'apparecchio in misura
Fiche secteur pièce de essai
Clavija de red del aparato de prueba
MΩ
MΩ
METRATESTER 3
Mit der Greifklemme alle Metallteile u. metallisierten Teile abtasten.
All metal and metallic parts must be tested with the Caliper clamp.
Con cavo provvisto di morsetto toccare tutte le parti metalliche o metallizzate.
A l'aide d'une pince vérifier toutes les parties métalliques ou métallisées.
Con la pinza, tocar todas las piezas metálicas o metalizadas.
Netzstecker/Mains plug/Spina di rete/Fiche secteur/Clavija de red

Fig. 1

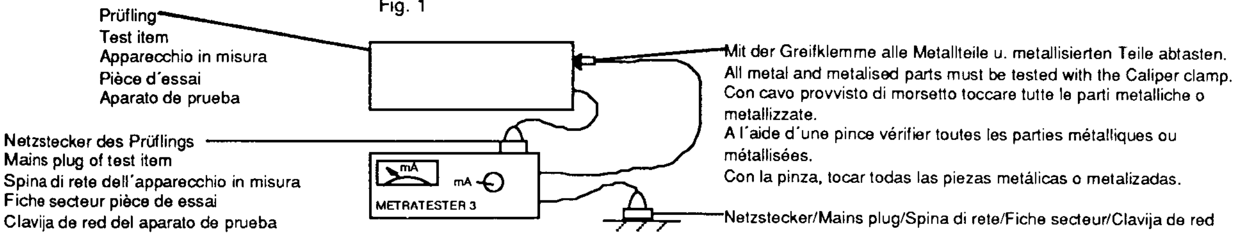

Prüfling
Test item
Apparecchio in misura
Pièce d'essai
Aparato de prueba
Netzstecker des Prüflings
Mains plug of test item
Spina di rete dell'apparecchio in misura
Fiche secteur pièce de essai
Clavija de red del aparato de prueba
mA
mA
METRATESTER 3
Mit der Greifklemme alle Metallteile u. metallisierten Teile abtasten.
All metal and metalised parts must be tested with the Caliper clamp.
Con cavo provvisto di morsetto toccare tutte le parti metalliche o metallizzate.
A l'aide d'une pince vérifier toutes les parties métalliques ou métallisées.
Con la pinza, tocar todas las piezas metálicas o metalizadas.
Netzstecker/Mains plug/Spina di rete/Fiche secteur/Clavija de red

Fig. 2

Empfehlungen für den Servicefall

- Nur Original - Ersatzteile verwenden.
  Bei Bauteilen oder Baugruppen mit der Sicherheitskennzeichnung ⚠ sind Original - Ersatzteile zwingend notwendig.
- Auf Sollwert der Sicherungen achten.
  Zur Sicherheit beitragende Teile des Gerätes dürfen weder beschädigt noch offensichtlich ungeeignet sein.
- Dies gilt besonders für Isolierungen und Isolierteile.
- Netzleitungen und Anschlußleitungen sind auf äußere Mängel vor dem Anschluß zu prüfen. Isolation prüfen!
- Die Funktionssicherheit der Zugentlastung und von Biegeschutz-Tüllen ist zu prüfen.
- Thermisch belastete Lötstellen absaugen und neu löten.
- Belüftungen frei lassen.

(GB) Safety Standard Compliance

After service work on a product conforming to the Safety Class II, the insulating resistance and the leakage current with the product switch on must be checked according to VDE 0701 or to the specification valid at the installation location!
This product conforms to the Safety Class II, as identified by the symbol ⧈ .

- **Measurement of the Insulation Resistance to VDE 0701**,
  Connect an Insulation Meter (U_{Test} = 500 V-) to both mains poles simultaneously and between all cabinet or functional parts (antenna, sockets, buttons, decorative parts, etc.) made from metal or metal alloy. The product is fault free if:
  $R_{Isol} \geq 2\ M\Omega$ at U_{Test} = 500 V-
  Measuring time: ≥ 1s, (Fig. 1)

Comment: On product conforming to the Safety class II the Insulation Resistance can be < 2 MOhm, dependent contructively on discharge resistors. In this cases, the check of the leakage current is significant.

- **Measurement of the Leakage Current to VDE 0701.**
  Connect the Leakage Current Meter (U_{Test} = 220 V≈) to both mains poles simultaneously and between all cabinet or functional parts (antenna, sockets, buttons, screws, etc.) mad from metal or metal alloy. The product is fault free if:
  $I_{Leak} \leq 1$ mA at U_{Test} = 220 V ≈
  Measuring time: ≥ 1 s, (Fig. 2)
- We recommend that the measurements are carried out using the **METRATESTER 3**. (Test equipment for checking electrical products to VDE 0701).

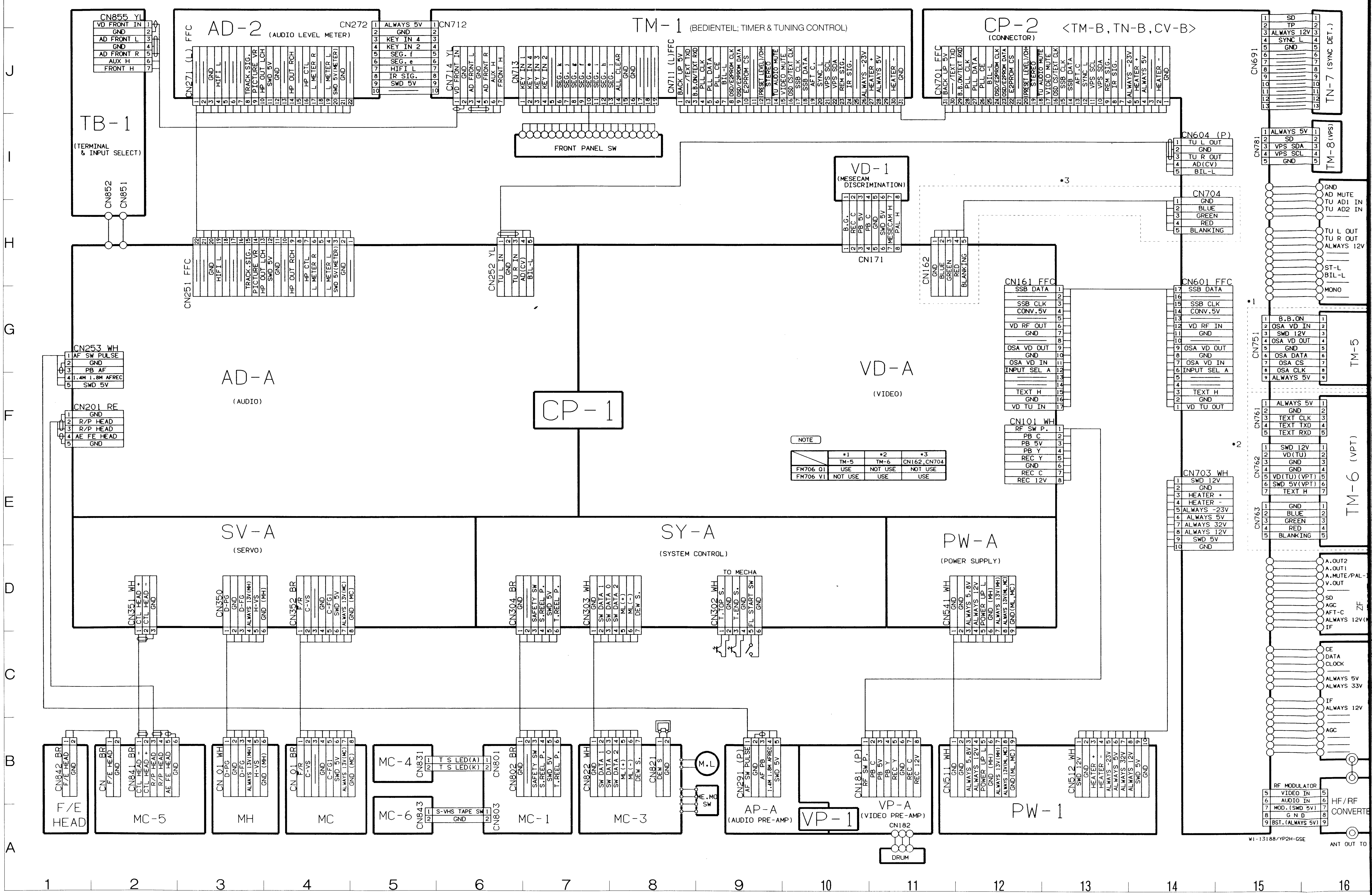
  Metrawatt GmbH
  Geschäftsstelle Bayern
  Triebstr. 44
  D 8000 München 50
- If the safety of the product is not proved, because
  - a repair and restoration is impossible
  - or the request of the user is that the restoration is not to be carried out, the operator of the product must be warned of the danger by a written warning.

Recommendation for service repairs

- Use only original spare parts.
  With components or assemblies accompanied with the Safety Symbol only original-spare parts are strictly to be used.
- Use only original fuse value.
- Safety compliance, parts of the product must not be visually damaged or unsuitable. This is valid especially for insulators and insulating parts.
- Mains leads and connecting leads should be checked for external damage before connection. Check the insulation!
- The functional safety of the tension relief and bending protection bushes are to be checked:
- Thermally loaded solder pads are to be suck off and re-soldered. Ensure that the ventilation slots are not obstructed.

Schaltpläne u. Platinen FM706Q1/FM706V1

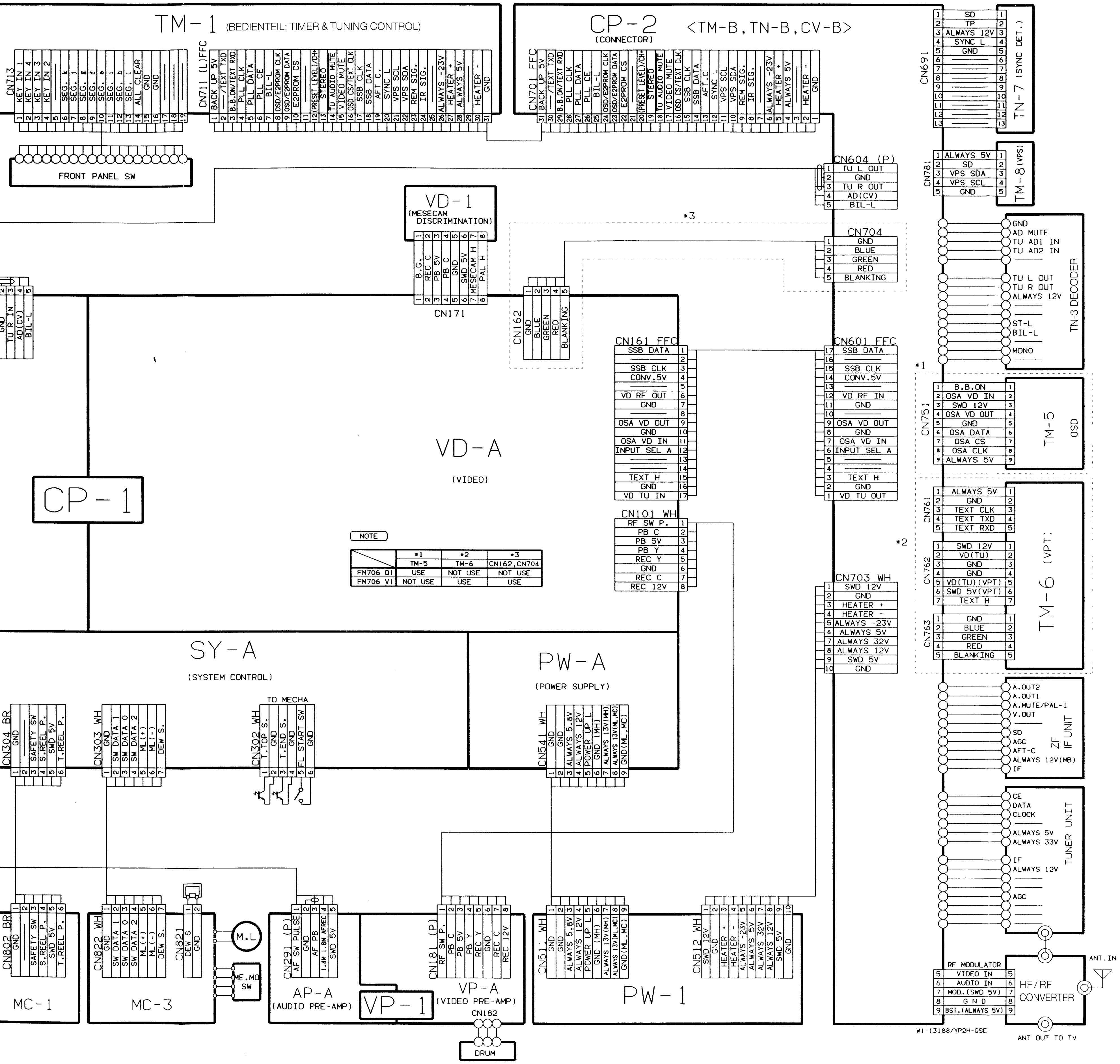
BLOCKSCHALTPLAN / OVERALL WIRING DIAGRAM


TB-1
(TERMINAL & INPUT SELECT)
CN855 YL
VD FRONT IN
GND
AD FRONT L
GND
AD FRONT R
AUX H
FRONT H
CN852
CN851
AD-2
(AUDIO LEVEL METER)
CN271 (L) FFC
CN272
ALWAYS 5V
GND
KEY IN 4
KEY IN 2
SEG. f
SEG. e
HIFI L
IR SIG.
SWD 5V
CN712
TM-1
(BEDIENTEIL; TIMER & TUNING CONTROL)
CN714 YL
CN713
CN711 (L)FFC
FRONT PANEL SW
CP-2
(CONNECTOR)
<TM-B, TN-B, CV-B>
CN701 FFC
TN-7 (SYNC DET.)
CN691
SD
TP
ALWAYS 12V
SYNC L
GND
TM-8 (VPS)
CN781
ALWAYS 5V
SD
VPS SDA
VPS SCL
GND
CN604 (P)
TU L OUT
GND
TU R OUT
AD(CV)
BIL-L
VD-1
(MESECAM DISCRIMINATION)
CN171
CN704
GND
BLUE
GREEN
RED
BLANKING
CN162
AD-A
(AUDIO)
CN251 FFC
CN252 YL
TU L IN
GND
TU R IN
AD(CV)
BIL-L
CN253 WH
AF SW PULSE
GND
PB AF
1.4M 1.8M AFREC
SWD 5V
CN201 RE
GND
R/P HEAD
R/P HEAD
AE FE HEAD
GND
CP-1
VD-A
(VIDEO)
CN161 FFC
SSB DATA
SSB CLK
CONV.5V
VD RF OUT
GND
OSA VD OUT
GND
OSA VD IN
INPUT SEL A
TEXT H
GND
VD TU IN
CN601 FFC
SSB DATA
SSB CLK
CONV.5V
VD RF IN
GND
OSA VD OUT
GND
OSA VD IN
INPUT SEL A
TEXT H
GND
VD TU OUT
CN101 WH
RF SW P.
PB C
PB 5V
PB Y
REC Y
GND
REC C
REC 12V
CN703 WH
SWD 12V
GND
HEATER +
HEATER -
ALWAYS -23V
ALWAYS 5V
ALWAYS 32V
ALWAYS 12V
SWD 5V
GND
*1
*2
*3
CN751
B.B.ON
OSA VD IN
SWD 12V
OSA VD OUT
GND
OSA DATA
OSA CS
OSA CLK
ALWAYS 5V
TM-5
CN761
ALWAYS 5V
GND
TEXT CLK
TEXT TXD
TEXT RXD
CN762
SWD 12V
VD(TU)
GND
GND
VD(TU)(VPT)
SWD 5V(VPT)
TEXT H
CN763
GND
BLUE
GREEN
RED
BLANKING
TM-6 (VPT)
GND
AD MUTE
TU AD1 IN
TU AD2 IN
TU L OUT
TU R OUT
ALWAYS 12V
ST-L
BIL-L
MONO
A.OUT2
A.OUT1
A.MUTE/PAL-
V.OUT
SD
AGC
AFT-C
ALWAYS 12V
IF
ZF
CE
DATA
CLOCK
ALWAYS 5V
ALWAYS 33V
IF
ALWAYS 12V
AGC
SV-A
(SERVO)
CN351 WH
CN350
CN352 BR
SY-A
(SYSTEM CONTROL)
CN304 BR
CN303 WH
CN302 WH
TO MECHA
T.TOP S.
GND
T.END S.
GND
FL START SW
GND
PW-A
(POWER SUPPLY)
CN541 WH
CN842 BR
F/E HEAD
F/E HEAD
MC-5
CN841 BR
MH
CN 01 WH
MC
CN 01 BR
MC-4
CN831
T S LED(A)
T S LED(K)
MC-6
CN843
S-VHS TAPE SW
GND
CN801
CN802 BR
CN803
MC-1
CN822 WH
CN821
MC-3
M.L
ME.MO SW
AP-A
(AUDIO PRE-AMP)
CN291 (P)
AF SW PULSE
GND
AF PB
1.4M 1.8M AFREC
SWD 5V
VP-1
CN181 (P)
RF SW P.
PB 5V
PB C
PB Y
REC Y
GND
REC C
REC 12V
VP-A
(VIDEO PRE-AMP)
CN182
DRUM
PW-1
CN511 WH
CN512 WH
RF MODULATOR
VIDEO IN
AUDIO IN
MOD. (SWD 5V)
GND
BST. (ALWAYS 5V)
HF/RF CONVERTE
ANT OUT TO
W1-13188/YP2H-GSE
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

NOTE

	*1	*2	*3
	TM-5	TM-6	CN162, CN704
FM706 Q1	USE	NOT USE	NOT USE
FM706 V1	NOT USE	USE	USE

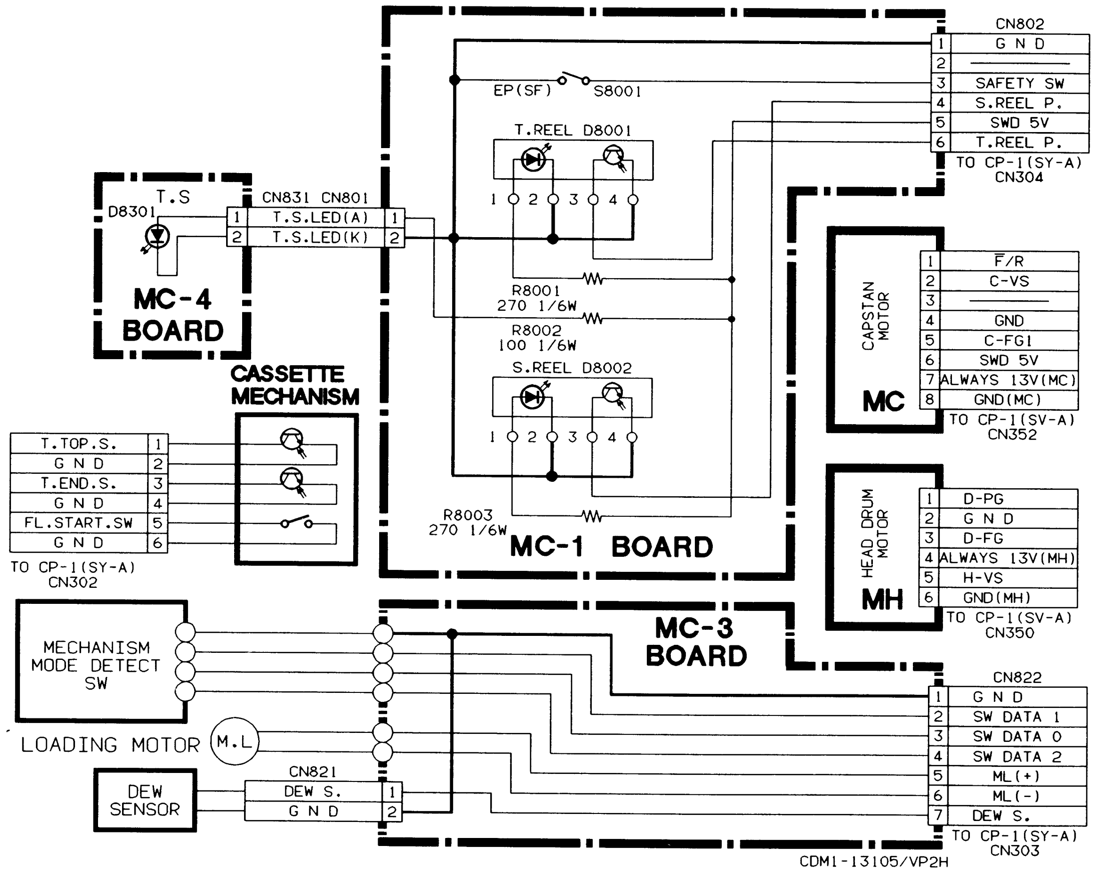
BLOCKSCHALTPLAN / OVERALL WIRING DIAGRAM


TM-1 (BEDIENTEIL; TIMER & TUNING CONTROL)
CN713
CN711 (L)FFC
FRONT PANEL SW
CP-2 (CONNECTOR) <TM-B, TN-B, CV-B>
CN701 FFC
CN691
TN-7 (SYNC DET.)
CN781
TM-8 (VPS)
CN604 (P)
VD-1 (MESECAM DISCRIMINATION)
CN171
CN162
CN704
TN-3 DECODER
CN161 FFC
CN601 FFC
VD-A (VIDEO)
CN751
TM-5 OSD
CN761
CN762
CN763
TM-6 (VPT)
CN101 WH
CN703 WH
CP-1
SY-A (SYSTEM CONTROL)
TO MECHA
CN304 BR
CN303 WH
CN302 WH
PW-A (POWER SUPPLY)
CN541 WH
ZF IF UNIT
TUNER UNIT
RF MODULATOR
HF/RF CONVERTER
ANT. IN
ANT OUT TO TV
CN802 BR
MC-1
CN822 WH
CN821
MC-3
M.L
ME.MO SW
CN291 (P)
AP-A (AUDIO PRE-AMP)
VP-1
CN181 (P)
VP-A (VIDEO PRE-AMP)
CN182
DRUM
CN511 WH
CN512 WH
PW-1
W1-13188/YP2H-GSE
•1
•2
•3

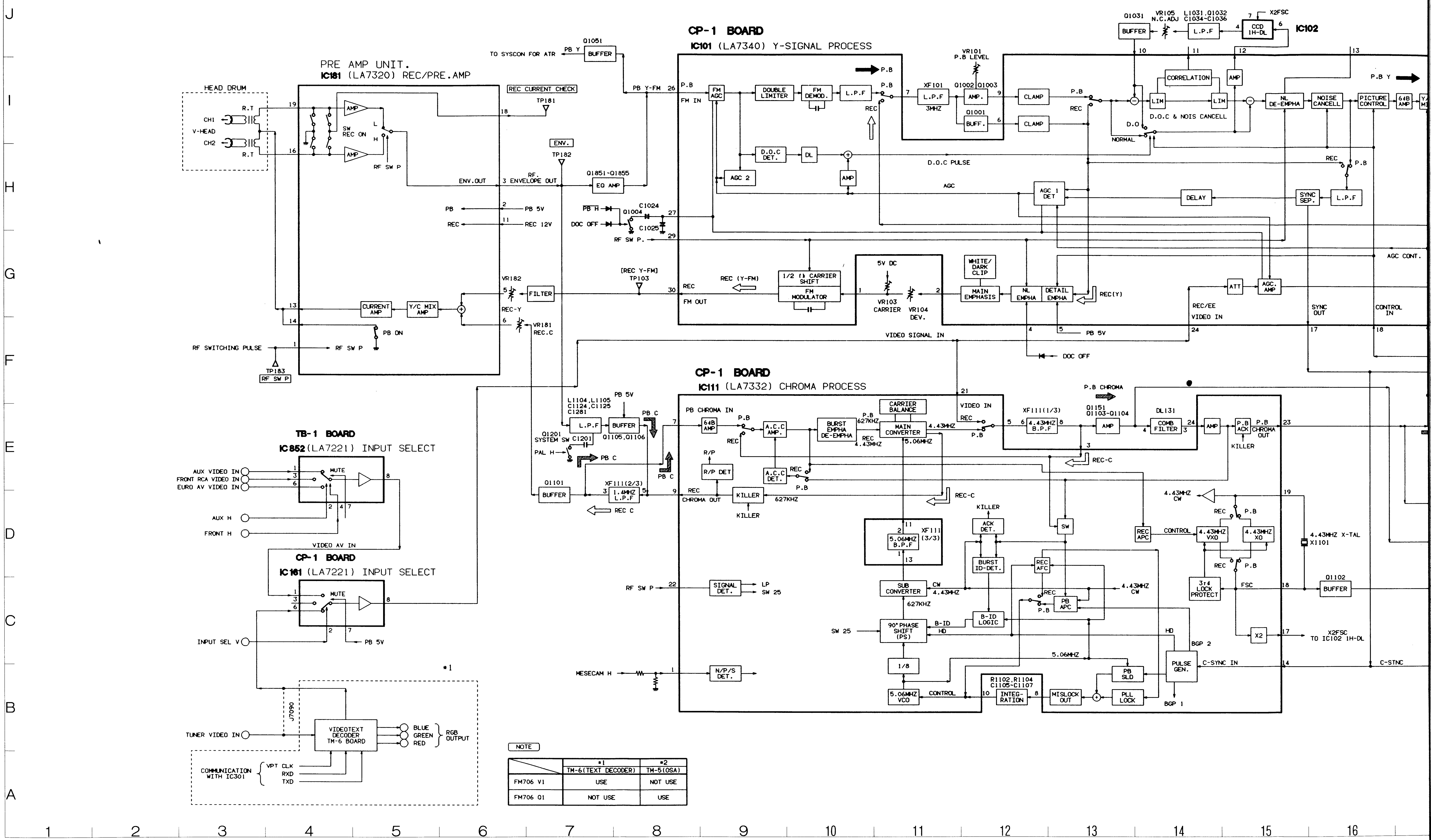
NOTE

	•1	•2	•3
	TM-5	TM-6	CN162,CN704
FM706 01	USE	NOT USE	NOT USE
FM706 V1	NOT USE	USE	USE

MECHANISM CONNECTION CIRCUIT


CN802
GND
SAFETY SW
S.REEL P.
SWD 5V
T.REEL P.
TO CP-1(SY-A) CN304
EP(SF) S8001
T.REEL D8001
T.S
D8301
CN831 CN801
T.S.LED(A)
T.S.LED(K)
MC-4 BOARD
R8001 270 1/6W
R8002 100 1/6W
S.REEL D8002
CASSETTE MECHANISM
T.TOP.S.
T.END.S.
FL.START.SW
TO CP-1(SY-A) CN302
R8003 270 1/6W
MC-1 BOARD
CAPSTAN MOTOR
MC
F/R
C-VS
C-FG1
SWD 5V
ALWAYS 13V(MC)
GND(MC)
TO CP-1(SV-A) CN352
HEAD DRUM MOTOR
MH
D-PG
D-FG
ALWAYS 13V(MH)
H-VS
GND(MH)
TO CP-1(SV-A) CN350
MECHANISM MODE DETECT SW
MC-3 BOARD
CN822
SW DATA 1
SW DATA 0
SW DATA 2
ML(+)
ML(-)
DEW S.
LOADING MOTOR
M.L
DEW SENSOR
CN821
TO CP-1(SY-A) CN303
CDM1-13105/VP2H

VIDEO BLOCK DIAGRAM

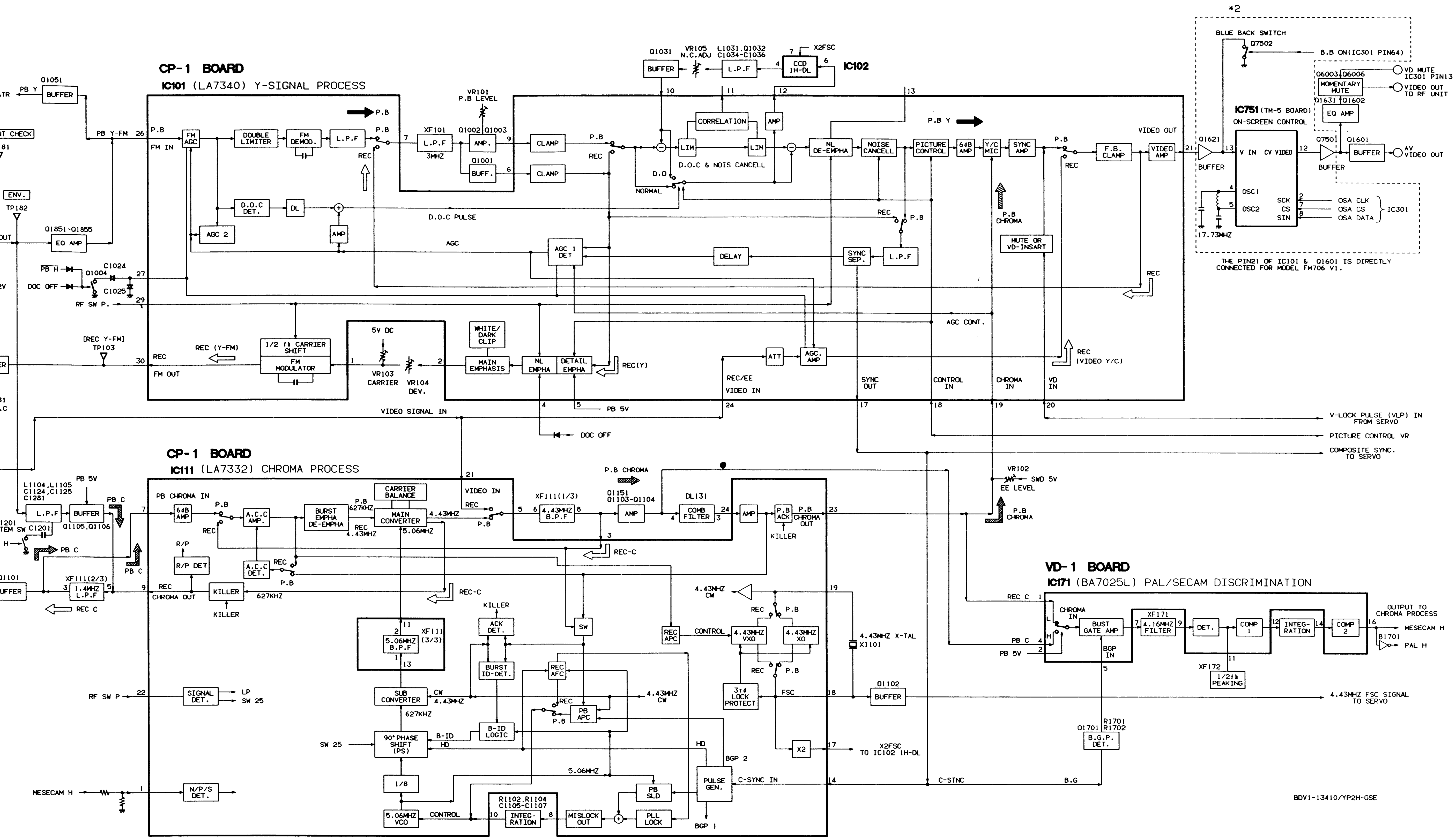


PRE AMP UNIT.
IC181 (LA7320) REC/PRE.AMP
HEAD DRUM
CH1
V-HEAD
CH2
R.T
AMP
SW REC ON
RF SW P
CURRENT AMP
Y/C MIX AMP
PB ON
RF SWITCHING PULSE
TP183
RF SW P
REC CURRENT CHECK
TP181
ENV.
TP182
ENV.OUT
RF. ENVELOPE OUT
PB 5V
REC 12V
VR182
VR181
REC-Y
REC.C
FILTER
Q1051
BUFFER
TO SYSCON FOR ATR
PB Y
PB Y-FM
Q1851-Q1855
EQ AMP
PB H
DOC OFF
Q1004
C1024
C1025
RF SW P.
[REC Y-FM]
TP103
CP-1 BOARD
IC101 (LA7340) Y-SIGNAL PROCESS
P.B
FM IN
FM AGC
DOUBLE LIMITER
FM DEMOD.
L.P.F
D.O.C DET.
DL
AGC 2
AMP
REC (Y-FM)
1/2 CARRIER SHIFT
FM MODULATOR
FM OUT
5V DC
VR103 CARRIER
VR104 DEV.
XF101 L.P.F 3MHZ
VR101 P.B LEVEL
Q1002 Q1003 AMP.
Q1001 BUFF.
CLAMP
D.O.C PULSE
AGC
AGC 1 DET
WHITE/DARK CLIP
MAIN EMPHASIS
NL EMPHA
DETAIL EMPHA
REC(Y)
PB 5V
DOC OFF
VIDEO SIGNAL IN
Q1031 BUFFER
VR105 N.C.ADJ
L1031,Q1032 C1034-C1036
L.P.F
CCD 1H-DL
X2FSC
IC102
CORRELATION
LIM
D.O.C & NOIS CANCELL
D.O
NORMAL
NL DE-EMPHA
NOISE CANCELL
PICTURE CONTROL
6dB AMP
P.B Y
DELAY
SYNC SEP.
AGC CONT.
ATT
AGC. AMP
REC/EE VIDEO IN
SYNC OUT
CONTROL IN
CP-1 BOARD
IC111 (LA7332) CHROMA PROCESS
PB CHROMA IN
6dB AMP
A.C.C AMP.
BURST EMPHA DE-EMPHA
CARRIER BALANCE
MAIN CONVERTER
627KHZ
4.43MHZ
5.06MHZ
R/P
R/P DET
A.C.C DET.
KILLER
REC CHROMA OUT
REC-C
VIDEO IN
XF111(1/3) 4.43MHZ B.P.F
Q1151 Q1103-Q1104 AMP
DL131 COMB FILTER
P.B CHROMA
P.B ACK
P.B CHROMA OUT
KILLER
L1104,L1105 C1124,C1125 C1281
L.P.F
BUFFER
Q1105,Q1106
PB C
Q1201 SYSTEM SW C1201
PAL H
Q1101 BUFFER
XF111(2/3) 1.4MHZ L.P.F
REC C
XF111 (3/3) 5.06MHZ B.P.F
ACK DET.
BURST ID-DET.
SW
REC AFC
REC APC
4.43MHZ CW
CONTROL
4.43MHZ VXO
4.43MHZ XO
4.43MHZ X-TAL X1101
SUB CONVERTER
CW
PB APC
B-ID LOGIC
90° PHASE SHIFT (PS)
B-ID
HD
1/8
5.06MHZ VCO
R1102,R1104 C1105-C1107
INTEG-RATION
MISLOCK OUT
PLL LOCK
PB SLD
PULSE GEN.
BGP 1
BGP 2
C-SYNC IN
3rd LOCK PROTECT
FSC
X2
Q1102 BUFFER
X2FSC TO IC102 1H-DL
C-STNC
SIGNAL DET.
LP
SW 25
RF SW P
N/P/S DET.
MESECAM H
TB-1 BOARD
IC852 (LA7221) INPUT SELECT
AUX VIDEO IN
FRONT RCA VIDEO IN
EURO AV VIDEO IN
MUTE
AUX H
FRONT H
VIDEO AV IN
CP-1 BOARD
IC161 (LA7221) INPUT SELECT
INPUT SEL V
PB 5V
*1
J7090
TUNER VIDEO IN
VIDEOTEXT DECODER TM-6 BOARD
BLUE
GREEN
RED
RGB OUTPUT
COMMUNICATION WITH IC301
VPT CLK
RXD
TXD
K J I H G F E D C B A
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

NOTE

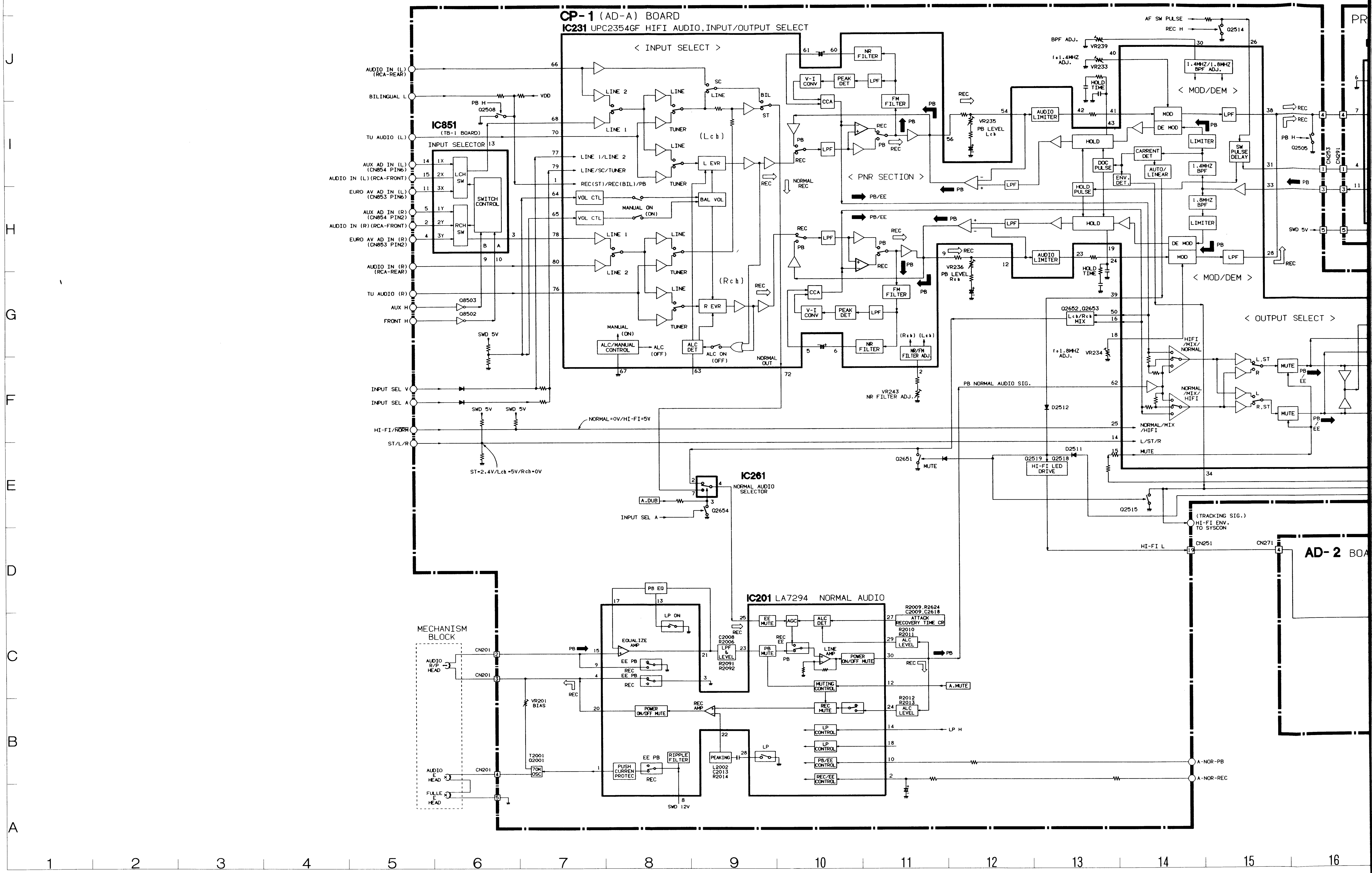
	*1 TM-6(TEXT DECODER)	*2 TM-5(OSA)
FM706 V1	USE	NOT USE
FM706 Q1	NOT USE	USE

VIDEO BLOCK DIAGRAM


CP-1 BOARD
IC101 (LA7340) Y-SIGNAL PROCESS
Q1051
BUFFER
PB Y
PB Y-FM
26
P.B
FM IN
FM AGC
DOUBLE LIMITER
FM DEMOD.
L.P.F
REC
XF101
L.P.F
3MHZ
VR101
P.B LEVEL
Q1002 Q1003
AMP.
Q1001
BUFF.
CLAMP
Q1031
BUFFER
VR105
N.C.ADJ
L1031,Q1032
C1034-C1036
CCD
1H-DL
X2FSC
IC102
CORRELATION
AMP
LIM
D.O.C & NOIS CANCELL
D.O
NORMAL
P.B Y
NL DE-EMPHA
NOISE CANCELL
PICTURE CONTROL
6dB AMP
Y/C MIC
SYNC AMP
F.B. CLAMP
VIDEO OUT
VIDEO AMP
D.O.C DET.
DL
AGC 2
AMP
D.O.C PULSE
AGC
AGC 1 DET
DELAY
SYNC SEP.
P.B CHROMA
MUTE OR VD-INSART
ENV.
TP182
Q1851-Q1855
EQ AMP
PB H
Q1004
C1024
C1025
DOC OFF
RF SW P.
27
29
[REC Y-FM]
TP103
30
REC
FM OUT
REC (Y-FM)
1/2 (!) CARRIER SHIFT
FM MODULATOR
5V DC
VR103 CARRIER
VR104 DEV.
WHITE/ DARK CLIP
MAIN EMPHASIS
NL EMPHA
DETAIL EMPHA
REC(Y)
ATT
AGC. AMP
AGC CONT.
REC (VIDEO Y/C)
REC/EE VIDEO IN
SYNC OUT
CONTROL IN
CHROMA IN
VD IN
24
17
18
19
20
PB 5V
DOC OFF
VIDEO SIGNAL IN
V-LOCK PULSE (VLP) IN FROM SERVO
PICTURE CONTROL VR
COMPOSITE SYNC. TO SERVO
*2
BLUE BACK SWITCH
Q7502
B.B ON(IC301 PIN64)
Q6003,Q6006
MOMENTARY MUTE
VD MUTE IC301 PIN13
VIDEO OUT TO RF UNIT
IC751 (TM-5 BOARD) ON-SCREEN CONTROL
Q1631 Q1602
EQ AMP
Q1621
BUFFER
V IN
CV VIDEO
Q7501
Q1601
AV VIDEO OUT
OSC1
OSC2
SCK
CS
SIN
OSA CLK
OSA CS
OSA DATA
IC301
17.73MHZ
THE PIN21 OF IC101 & Q1601 IS DIRECTLY CONNECTED FOR MODEL FM706 V1.
CP-1 BOARD
IC111 (LA7332) CHROMA PROCESS
PB 5V
L1104,L1105
C1124,C1125
C1281
L.P.F
BUFFER
Q1105,Q1106
PB C
PB CHROMA IN
6dB AMP
A.C.C AMP.
BURST EMPHA DE-EMPHA
CARRIER BALANCE
MAIN CONVERTER
627KHZ
4.43MHZ
5.06MHZ
R/P
R/P DET
A.C.C DET.
REC-C
Q1101
BUFFER
XF111(2/3)
1.4MHZ L.P.F
REC C
CHROMA OUT
KILLER
VIDEO IN
XF111(1/3)
4.43MHZ B.P.F
Q1151
Q1103-Q1104
DL131
COMB FILTER
P.B ACK
P.B CHROMA OUT
VR102
SWD 5V
EE LEVEL
ACK DET.
SW
REC APC
CONTROL
4.43MHZ VXO
4.43MHZ XO
4.43MHZ CW
4.43MHZ X-TAL
X1101
XF111 (3/3)
5.06MHZ B.P.F
BURST ID-DET.
REC AFC
PB APC
SUB CONVERTER
CW
3÷4 LOCK PROTECT
FSC
Q1102
BUFFER
4.43MHZ FSC SIGNAL TO SERVO
RF SW P
SIGNAL DET.
LP
SW 25
90° PHASE SHIFT (PS)
B-ID
HD
B-ID LOGIC
X2
X2FSC TO IC102 1H-DL
BGP 2
1/8
PB SLD
PULSE GEN.
C-SYNC IN
C-SYNC
MESECAM H
N/P/S DET.
5.06MHZ VCO
R1102,R1104
C1105-C1107
INTEG-RATION
MISLOCK OUT
PLL LOCK
BGP 1
VD-1 BOARD
IC171 (BA7025L) PAL/SECAM DISCRIMINATION
REC C
CHROMA IN
BUST GATE AMP
BGP IN
XF171
4.16MHZ FILTER
DET.
COMP 1
INTEG-RATION
COMP 2
OUTPUT TO CHROMA PROCESS
MESECAM H
B1701
PAL H
XF172
1/2(!) PEAKING
Q1701
R1701
R1702
B.G.P. DET.
B.G
BDV1-13410/YP2H-GSE

	*1 TM-6(TEXT DECODER)	*2 TM-5(OSA)
	USE	NOT USE
	NOT USE	USE

AUDIO BLOCK DIAGRAM


CP-1 (AD-A) BOARD
IC231 UPC2354GF HIFI AUDIO,INPUT/OUTPUT SELECT
< INPUT SELECT >
AUDIO IN (L) (RCA-REAR)
BILINGUAL L
TU AUDIO (L)
AUX AD IN (L) (CN854 PIN6)
AUDIO IN (L)(RCA-FRONT)
EURO AV AD IN (L) (CN853 PIN6)
AUX AD IN (R) (CN854 PIN2)
AUDIO IN (R)(RCA-FRONT)
EURO AV AD IN (R) (CN853 PIN2)
AUDIO IN (R) (RCA-REAR)
TU AUDIO (R)
AUX H
FRONT H
INPUT SEL V
INPUT SEL A
HI-FI/NORM
ST/L/R
IC851
(TB-1 BOARD)
INPUT SELECTOR
LCH SW
RCH SW
SWITCH CONTROL
PB H
Q2508
VDD
Q8503
Q8502
SWD 5V
NORMAL=0V/HI-FI=5V
ST=2.4V/Lch=5V/Rch=0V
LINE 2
LINE 1
LINE
TUNER
SC
BIL
ST
(Lch)
(Rch)
LINE 1/LINE 2
LINE/SC/TUNER
REC(ST)/REC(BIL)/PB
VOL CTL
BAL VOL
MANUAL ON (ON)
L EVR
R EVR
ALC/MANUAL CONTROL
ALC (OFF)
ALC DET
ALC ON (OFF)
NORMAL OUT
MANUAL (ON)
REC
PB
NORMAL REC
PB/EE
NR FILTER
V-I CONV
PEAK DET
LPF
FM FILTER
CCA
< PNR SECTION >
VR235 PB LEVEL Lch
VR236 PB LEVEL Rch
AUDIO LIMITER
HOLD
HOLD TIME
HOLD PULSE
DOC PULSE
ENV. DET.
CARRENT DET
AUTO/LINEAR
BPF ADJ.
VR239
f0 1.4MHZ ADJ.
VR233
1.4MHZ/1.8MHZ BPF ADJ.
< MOD/DEM >
MOD
DE MOD
LIMITER
1.4MHZ BPF
1.8MHZ BPF
SW PULSE DELAY
AF SW PULSE
REC H
Q2514
Q2505
SWD 5V
CN253
CN291
(Rch) (Lch)
NR/FM FILTER ADJ
VR243 NR FILTER ADJ.
Q2652,Q2653
Lch/Rch MIX
f0 1.8MHZ ADJ.
VR234
< OUTPUT SELECT >
HIFI /MIX/ NORMAL
NORMAL /MIX/ HIFI
L,ST
R
L
R,ST
MUTE
PB/EE
PB NORMAL AUDIO SIG.
D2512
NORMAL/MIX /HIFI
L/ST/R
D2511
Q2651
Q2519
Q2518
HI-FI LED DRIVE
Q2515
(TRACKING SIG.) HI-FI ENV. TO SYSCON
HI-FI L
CN251
CN271
AD-2 BOA
PR
IC261
NORMAL AUDIO SELECTOR
A.DUB
INPUT SEL A
Q2654
IC201 LA7294 NORMAL AUDIO
PB EQ
LP ON
EQUALIZE AMP
EE PB
EE MUTE
AGC
ALC DET
PB MUTE
LINE AMP
POWER ON/OFF MUTE
MUTING CONTROL
REC MUTE
REC AMP
POWER ON/OFF MUTE
PEAKING
LP
LP CONTROL
PB/EE CONTROL
REC/EE CONTROL
PUSH CURREN PROTEC
RIPPLE FILTER
LPF & LEVEL
C2008 R2006
R2091 R2092
R2009,R2624 C2009,C2618
ATTACK RECOVERY TIME CR
R2010 R2011 ALC LEVEL
R2012 R2013 ALC LEVEL
L2002 C2013 R2014
A.MUTE
LP H
A-NOR-PB
A-NOR-REC
SWD 12V
VR201 BIAS
T2001 Q2001
70K OSC
MECHANISM BLOCK
AUDIO R/P HEAD
AUDIO E HEAD
FULLE E HEAD
CN201
K
J
I
H
G
F
E
D
C
B
A
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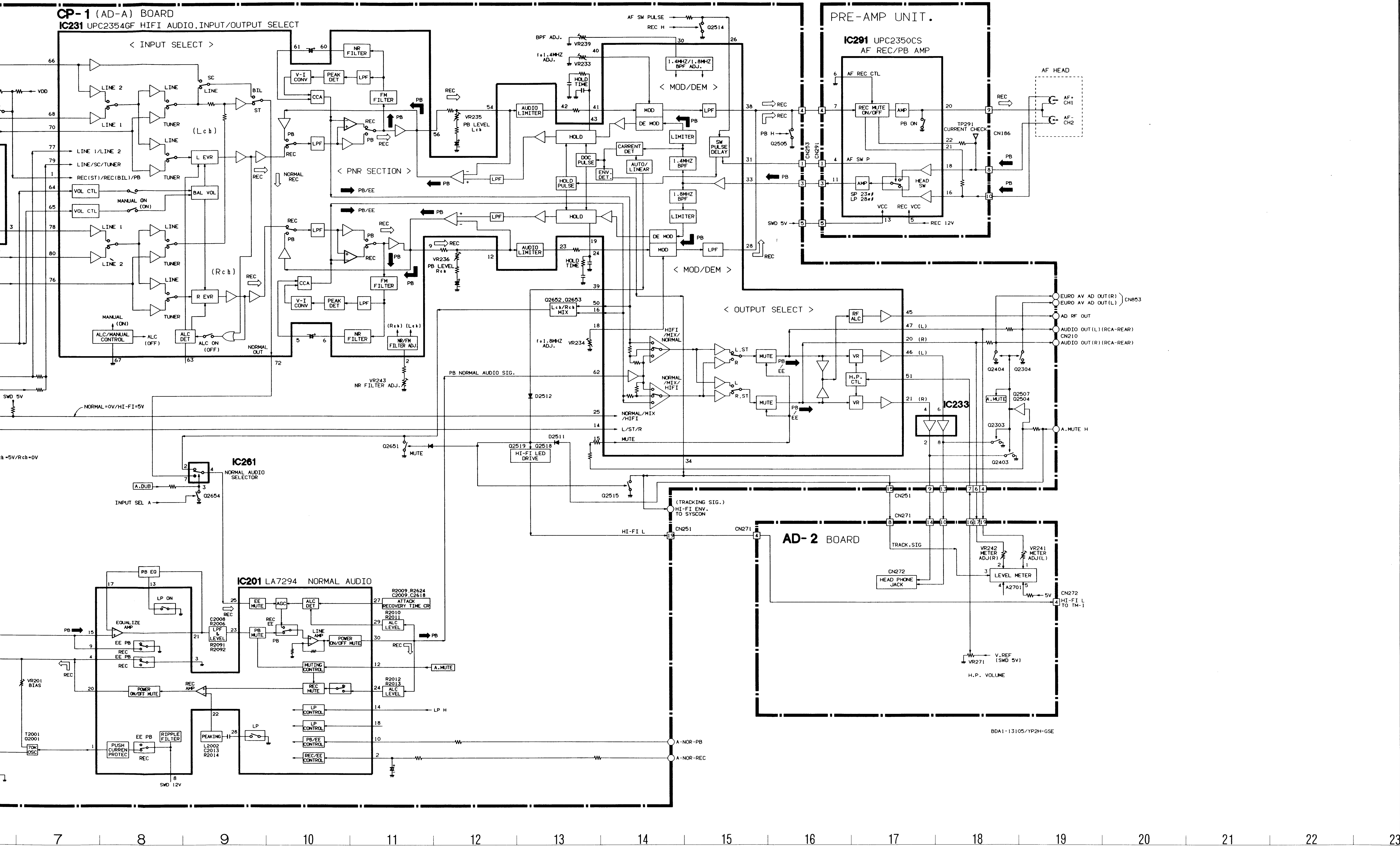
AUDIO BLOCK DIAGRAM


CP-1 (AD-A) BOARD
IC231 UPC2354GF HIFI AUDIO, INPUT/OUTPUT SELECT
< INPUT SELECT >
LINE 2
LINE 1
LINE
TUNER
SC
BIL
ST
(Lch)
(Rch)
L EVR
R EVR
BAL VOL
VOL CTL
MANUAL ON (ON)
LINE 1/LINE 2
LINE/SC/TUNER
REC(ST)/REC(BIL)/PB
ALC/MANUAL CONTROL
ALC (OFF)
ALC DET
ALC ON (OFF)
NORMAL OUT
MANUAL (ON)
VDD
SWD 5V
NORMAL=0V/HI-FI=5V
NR FILTER
V-I CONV
PEAK DET
LPF
CCA
FM FILTER
< PNR SECTION >
PB/EE
NORMAL REC
NR/FM FILTER ADJ
VR243 NR FILTER ADJ.
VR235 PB LEVEL Lch
VR236 PB LEVEL Rch
AUDIO LIMITER
HOLD
HOLD PULSE
DOC PULSE
ENV. DET.
CARRENT DET
AUTO/LINEAR
HOLD TIME
BPF ADJ.
VR239
fo1.4MHZ ADJ.
VR233
AF SW PULSE
REC H
Q2514
1.4MHZ/1.8MHZ BPF ADJ.
< MOD/DEM >
MOD
DE MOD
LIMITER
1.4MHZ BPF
1.8MHZ BPF
SW PULSE DELAY
PB H
Q2505
CN253
CN291
PRE-AMP UNIT.
IC291 UPC2350CS AF REC/PB AMP
AF REC CTL
REC MUTE ON/OFF
AMP
PB ON
AF SW P
HEAD SW
SP 23#/ LP 28#/
VCC
REC VCC
REC 12V
SWD 5V
TP291 CURRENT CHECK
CN186
AF HEAD
AF+ CH1
AF- CH2
Q2652, Q2653
Lch/Rch MIX
fo1.8MHZ ADJ.
VR234
< OUTPUT SELECT >
HIFI /MIX/ NORMAL
NORMAL /MIX/ HIFI
L, ST
R
L
R, ST
MUTE
PB/EE
RF ALC
VR
H.P. CTL
IC233
NORMAL/MIX /HIFI
L/ST/R
MUTE
PB NORMAL AUDIO SIG.
D2512
D2511
Q2651
Q2519 Q2518
HI-FI LED DRIVE
EURO AV AD OUT(R)
EURO AV AD OUT(L)
CN853
AD RF OUT
AUDIO OUT(L)(RCA-REAR)
CN210
AUDIO OUT(R)(RCA-REAR)
Q2404
Q2304
A.MUTE
Q2507 Q2504
Q2303
Q2403
A.MUTE H
IC261
NORMAL AUDIO SELECTOR
A.DUB
INPUT SEL A
Q2654
Q2515
(TRACKING SIG.) HI-FI ENV. TO SYSCON
HI-FI L
CN251
CN271
AD-2 BOARD
TRACK.SIG
CN272 HEAD PHONE JACK
VR242 METER ADJ(R)
VR241 METER ADJ(L)
LEVEL METER
A2701
5V
CN272 HI-FI L TO TM-1
V.REF (SWD 5V)
VR271
H.P. VOLUME
IC201 LA7294 NORMAL AUDIO
PB EQ
LP ON
EQUALIZE AMP
EE PB
REC
C2008 R2006
LPF & LEVEL
R2091 R2092
EE MUTE
AGC
ALC DET
PB MUTE
LINE AMP
POWER ON/OFF MUTE
R2009, R2624 C2009, C2618 ATTACK RECOVERY TIME CR
R2010 R2011 ALC LEVEL
MUTING CONTROL
A.MUTE
REC MUTE
R2012 R2013 ALC LEVEL
LP CONTROL
LP H
PB/EE CONTROL
REC/EE CONTROL
A-NOR-PB
A-NOR-REC
REC AMP
POWER ON/OFF MUTE
PEAKING
L2002 C2013 R2014
LP
VR201 BIAS
T2001 Q2001 70K OSC
PUSH CURREN PROTEC
RIPPLE FILTER
SWD 12V
h =5V/Rch=0V
BDA1-13105/YP2H-GSE
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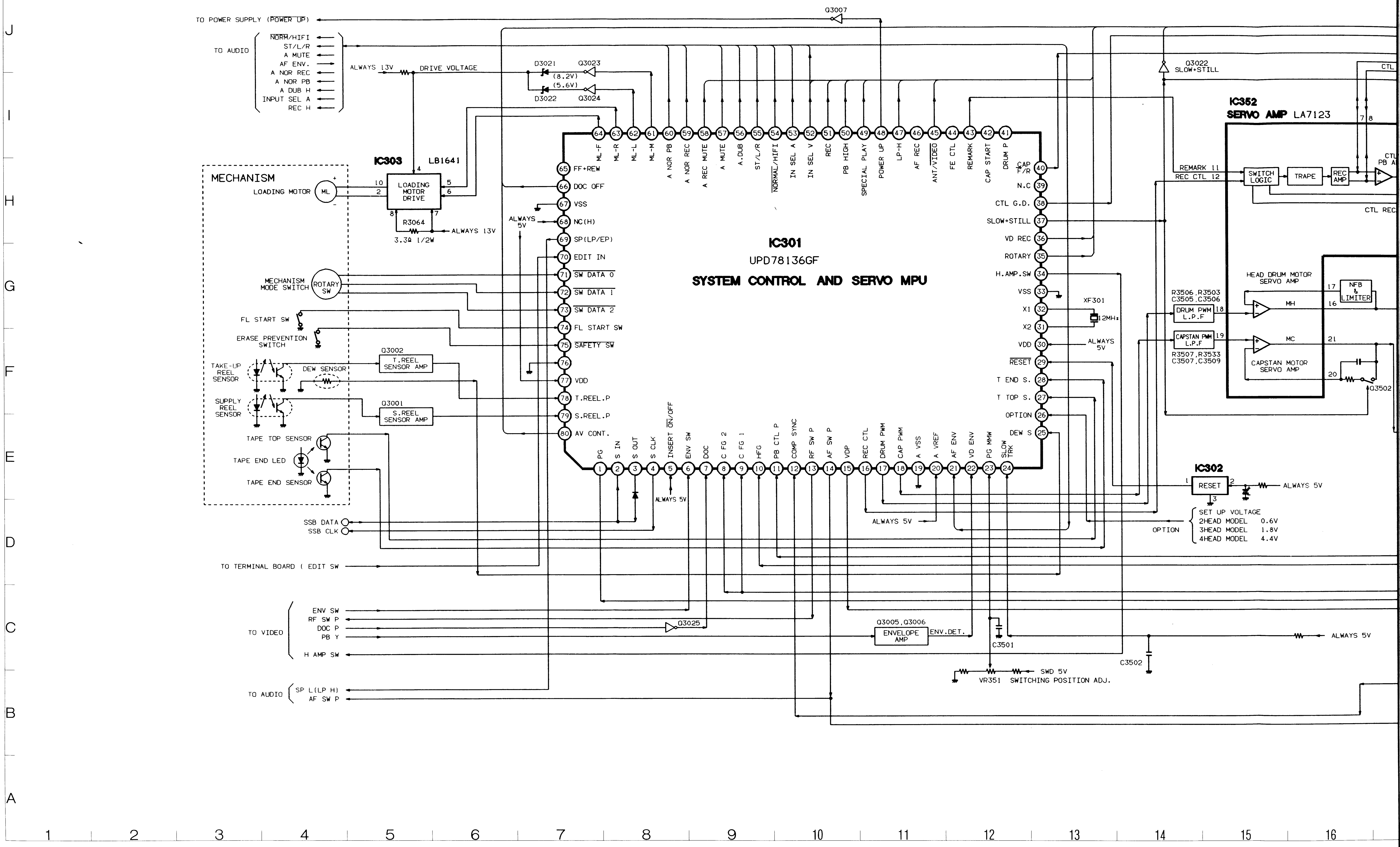
SYSTEM CONTROL & SERVO BLOCK DIAGRAM



TO POWER SUPPLY (POWER UP)
Q3007
TO AUDIO
NORM/HIFI
ST/L/R
A MUTE
AF ENV.
A NOR REC
A NOR PB
A DUB H
INPUT SEL A
REC H
ALWAYS 13V
DRIVE VOLTAGE
D3021
(8.2V)
Q3023
(5.6V)
D3022
Q3024
Q3022
SLOW+STILL
IC352
SERVO AMP LA7123
IC303
LB1641
LOADING MOTOR DRIVE
R3064
3.3Ω 1/2W
ALWAYS 13V
MECHANISM
LOADING MOTOR
ML
MECHANISM MODE SWITCH
ROTARY SW
FL START SW
ERASE PREVENTION SWITCH
TAKE-UP REEL SENSOR
DEW SENSOR
SUPPLY REEL SENSOR
Q3002
T.REEL SENSOR AMP
Q3001
S.REEL SENSOR AMP
TAPE TOP SENSOR
TAPE END LED
TAPE END SENSOR
ALWAYS 5V
IC301
UPD78136GF
SYSTEM CONTROL AND SERVO MPU
ML-F
ML-R
ML-L
ML-M
A NOR PB
A NOR REC
A REC MUTE
A MUTE
A.DUB
ST/L/R
NORMAL/HIFI
IN SEL A
IN SEL V
REC
PB HIGH
SPECIAL PLAY
POWER UP
LP-H
AF REC
ANT/VIDEO
FE CTL
REMARK
CAP START
DRUM P
FF+REW
DOC OFF
VSS
NC(H)
SP(LP/EP)
EDIT IN
SW DATA 0
SW DATA 1
SW DATA 2
FL START SW
SAFETY SW
VDD
T.REEL.P
S.REEL.P
AV CONT.
CAP F/R
N.C
CTL G.D.
SLOW+STILL
VD REC
ROTARY
H.AMP.SW
VSS
X1
X2
VDD
RESET
T END S.
T TOP S.
OPTION
DEW S
XF301
12MHz
ALWAYS 5V
PG
S IN
S OUT
S CLK
INSERT ON/OFF
ENV SW
DOC
C FG 2
C FG 1
HFG
PB CTL P
COMP SYNC
RF SW P
AF SW P
VDP
REC CTL
DRUM PWM
CAP PWM
A VSS
A VREF
AF ENV
VD ENV
PG MMW
SLOW TRK
REMARK 11
REC CTL 12
SWITCH LOGIC
TRAPE
REC AMP
CTL
CTL PB AMP
CTL REC
HEAD DRUM MOTOR SERVO AMP
NFB & LIMITER
MH
MC
R3506,R3503
C3505,C3506
DRUM PWM L.P.F
CAPSTAN PWM L.P.F
R3507,R3533
C3507,C3509
CAPSTAN MOTOR SERVO AMP
Q3502
IC302
RESET
ALWAYS 5V
OPTION
SET UP VOLTAGE
2HEAD MODEL 0.6V
3HEAD MODEL 1.8V
4HEAD MODEL 4.4V
SSB DATA
SSB CLK
TO TERMINAL BOARD (EDIT SW
TO VIDEO
ENV SW
RF SW P
DOC P
PB Y
H AMP SW
Q3025
Q3005,Q3006
ENVELOPE AMP
ENV.DET.
C3501
C3502
ALWAYS 5V
VR351 SWITCHING POSITION ADJ.
SWD 5V
TO AUDIO
SP L(LP H)
AF SW P
K
J
I
H
G
F
E
D
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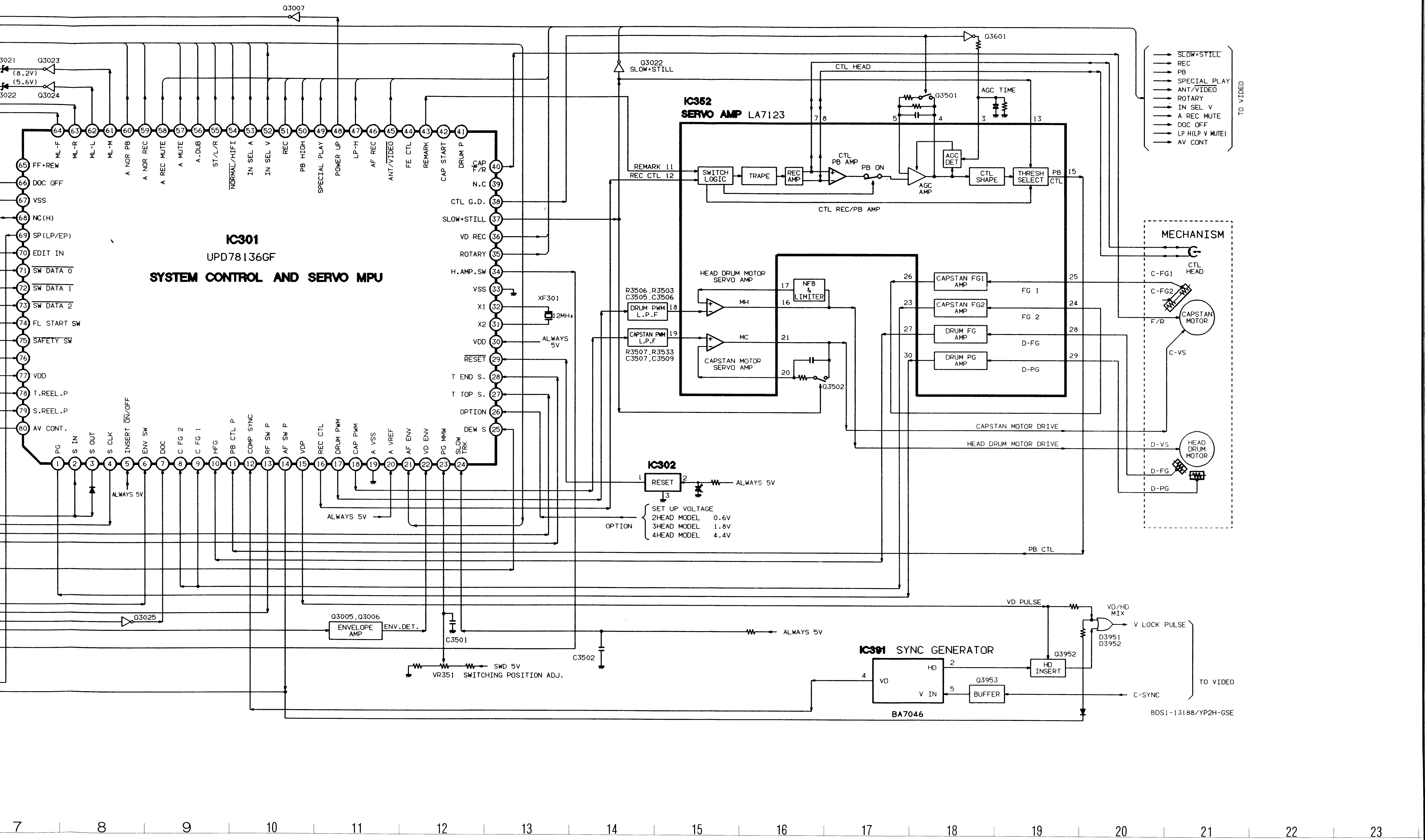
SYSTEM CONTROL & SERVO BLOCK DIAGRAM



IC301
UPD78136GF
SYSTEM CONTROL AND SERVO MPU
ML-F
ML-R
ML-L
ML-M
A NOR PB
A NOR REC
A REC MUTE
A MUTE
A.DUB
ST/L/R
NORMAL/HIFI
IN SEL A
IN SEL V
REC
PB HIGH
SPECIAL PLAY
POWER UP
LP-H
AF REC
ANT/VIDEO
FE CTL
REMARK
CAP START
DRUM P
FF+REW
DOC OFF
VSS
NC(H)
SP(LP/EP)
EDIT IN
SW DATA 0
SW DATA 1
SW DATA 2
FL START SW
SAFETY SW
VDD
T.REEL.P
S.REEL.P
AV CONT.
CAP F/R
N.C
CTL G.D.
SLOW+STILL
VD REC
ROTARY
H.AMP.SW
VSS
X1
X2
VDD
RESET
T END S.
T TOP S.
OPTION
DEW S
PG
S IN
S OUT
S CLK
INSERT ON/OFF
ENV SW
DOC
C FG 2
C FG 1
HFG
PB CTL P
COMP SYNC
RF SW P
AF SW P
VDP
REC CTL
DRUM PWM
CAP PWM
A VSS
A VREF
AF ENV
VD ENV
PG MMW
SLOW TRK
Q3007
Q3021
Q3023
(8.2V)
(5.6V)
Q3022
Q3024
Q3022
SLOW+STILL
Q3601
XF301
12MHz
ALWAYS 5V
IC352
SERVO AMP LA7123
CTL HEAD
AGC TIME
Q3501
REMARK 11
REC CTL 12
SWITCH LOGIC
TRAPE
REC AMP
CTL PB AMP
PB ON
AGC AMP
AGC DET
CTL SHAPE
THRESH SELECT
PB CTL
CTL REC/PB AMP
HEAD DRUM MOTOR SERVO AMP
NFB & LIMITER
MH
MC
CAPSTAN MOTOR SERVO AMP
Q3502
R3506,R3503
C3505,C3506
DRUM PWM L.P.F
CAPSTAN PWM L.P.F
R3507,R3533
C3507,C3509
CAPSTAN FG1 AMP
CAPSTAN FG2 AMP
DRUM FG AMP
DRUM PG AMP
FG 1
FG 2
D-FG
D-PG
CAPSTAN MOTOR DRIVE
HEAD DRUM MOTOR DRIVE
SLOW+STILL
REC
PB
SPECIAL PLAY
ANT/VIDEO
ROTARY
IN SEL V
A REC MUTE
DOC OFF
LP H(LP V MUTE)
AV CONT
TO VIDEO
MECHANISM
CTL HEAD
C-FG1
C-FG2
F/R
CAPSTAN MOTOR
C-VS
D-VS
HEAD DRUM MOTOR
D-FG
D-PG
IC302
RESET
ALWAYS 5V
SET UP VOLTAGE
2HEAD MODEL 0.6V
3HEAD MODEL 1.8V
4HEAD MODEL 4.4V
OPTION
ALWAYS 5V
PB CTL
Q3025
Q3005,Q3006
ENVELOPE AMP
ENV.DET.
C3501
C3502
ALWAYS 5V
VR351 SWITCHING POSITION ADJ.
SWD 5V
VD PULSE
VD/HD MIX
V LOCK PULSE
D3951
D3952
Q3952
HD INSERT
IC391 SYNC GENERATOR
HD
VD
V IN
Q3953
BUFFER
C-SYNC
TO VIDEO
BA7046
BDS1-13188/YP2H-GSE
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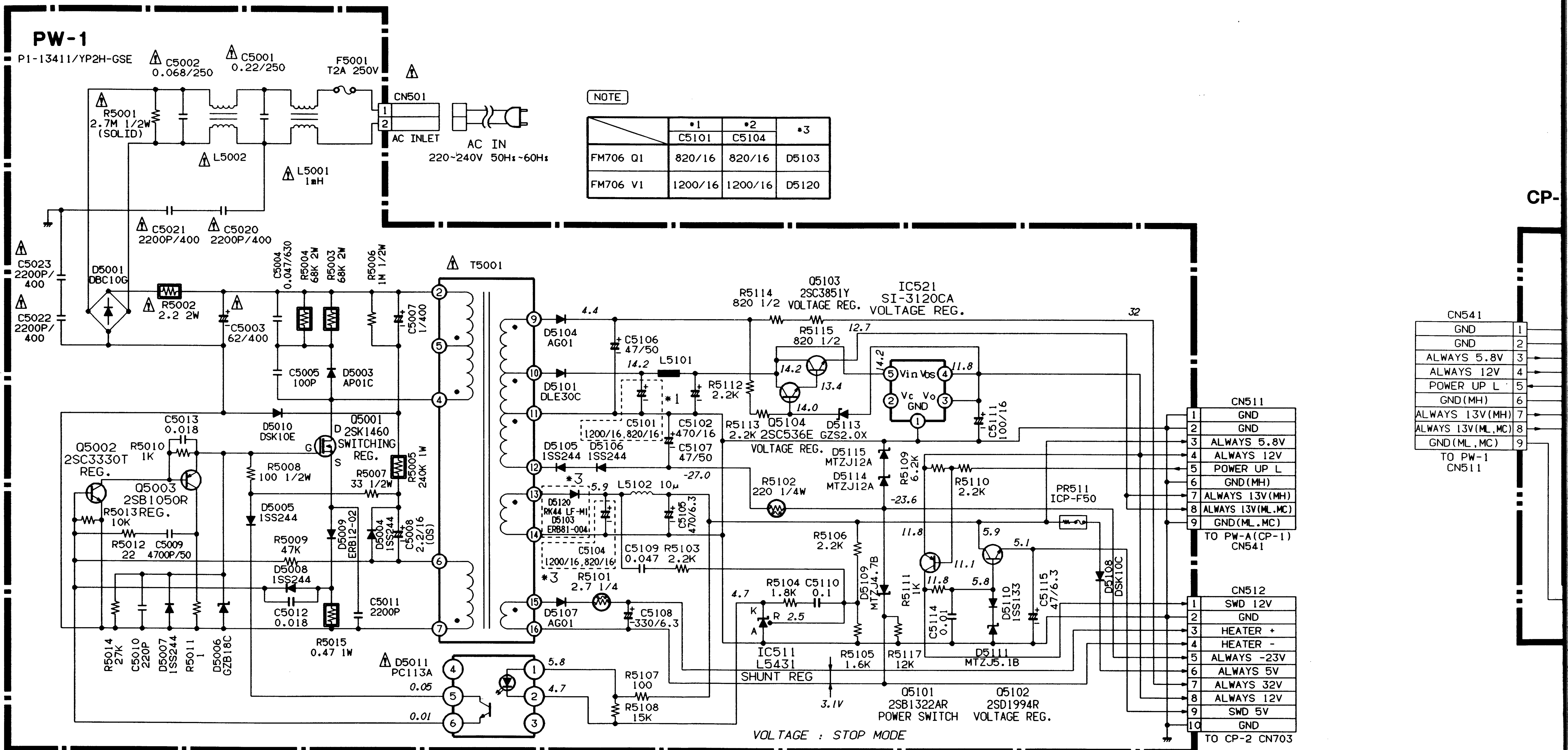
PW-1 NETZTEIL / POWER SUPPLY


PW-1
P1-13411/YP2H-GSE
C5002 0.068/250
C5001 0.22/250
F5001 T2A 250V
CN501
AC INLET
AC IN
220~240V 50Hz~60Hz
R5001 2.7M 1/2W (SOLID)
L5002
L5001 1mH
C5021 2200P/400
C5020 2200P/400
C5023 2200P/400
C5022 2200P/400
D5001 DBC10G
R5002 2.2 2W
C5003 62/400
C5004 0.047/630
R5004 68K 2W
R5003 68K 2W
R5006 1M 1/2W
C5007 1/400
T5001
C5005 100P
D5003 AP01C
C5013 0.018
D5010 DSK10E
Q5001 2SK1460 SWITCHING REG.
Q5002 2SC3330T REG.
R5010 1K
Q5003 2SB1050R REG.
R5013 10K
R5012 22
C5009 4700P/50
R5008 100 1/2W
R5007 33 1/2W
R5005 240K 1W
D5005 1SS244
R5009 47K
D5009 ERB12-02
D5004 1SS244
C5008 2.2/16 (OS)
D5008 1SS244
C5012 0.018
C5011 2200P
R5015 0.47 1W
R5014 27K
C5010 220P
D5007 1SS244
R5011 1
D5006 GZB18C
D5011 PC113A
0.05
0.01
5.8
4.7
D5104 AG01
4.4
C5106 47/50
14.2
L5101
D5101 DLE30C
*1
R5112 2.2K
C5101 1200/16,820/16
C5102 470/16
C5107 47/50
-27.0
D5105 1SS244
D5106 1SS244
*3
5.9
L5102 10μ
D5120 RK44 LF-M1
D5103 ERB81-004
C5105 470/6.3
C5104 1200/16,820/16
C5109 0.047
R5103 2.2K
R5101 2.7 1/4
D5107 AG01
C5108 330/6.3
R5107 100
R5108 15K
R5114 820 1/2
Q5103 2SC3851Y VOLTAGE REG.
IC521 SI-3120CA VOLTAGE REG.
32
R5115 820 1/2
12.7
14.2
13.4
14.0
11.8
Vin Vos
Vc Vo
GND
R5113 2.2K
Q5104 2SC536E VOLTAGE REG.
D5113 GZS2.0X
C5111 100/16
D5115 MTZJ12A
D5114 MTZJ12A
R5109 6.2K
R5110 2.2K
-23.6
R5102 220 1/4W
PR511 ICP-F50
R5106 2.2K
11.8
11.1
5.9
5.1
5.8
R5104 1.8K
C5110 0.1
4.7
K
R 2.5
A
D5109 MTZJ4.7B
R5111 1K
C5114 0.01
D5110 1SS133
C5115 47/6.3
D5108 DSK10C
IC511 L5431 SHUNT REG
R5105 1.6K
R5117 12K
D5111 MTZJ5.1B
3.1V
Q5101 2SB1322AR POWER SWITCH
Q5102 2SD1994R VOLTAGE REG.
VOLTAGE : STOP MODE
CN511
1 GND
2 GND
3 ALWAYS 5.8V
4 ALWAYS 12V
5 POWER UP L
6 GND(MH)
7 ALWAYS 13V(MH)
8 ALWAYS 13V(ML.MC)
9 GND(ML.MC)
TO PW-A(CP-1) CN541
CN512
1 SWD 12V
2 GND
3 HEATER +
4 HEATER -
5 ALWAYS -23V
6 ALWAYS 5V
7 ALWAYS 32V
8 ALWAYS 12V
9 SWD 5V
10 GND
TO CP-2 CN703
CN541
GND 1
GND 2
ALWAYS 5.8V 3
ALWAYS 12V 4
POWER UP L 5
GND(MH) 6
ALWAYS 13V(MH) 7
ALWAYS 13V(ML.MC) 8
GND(ML.MC) 9
TO PW-1 CN511
CP-

NOTE

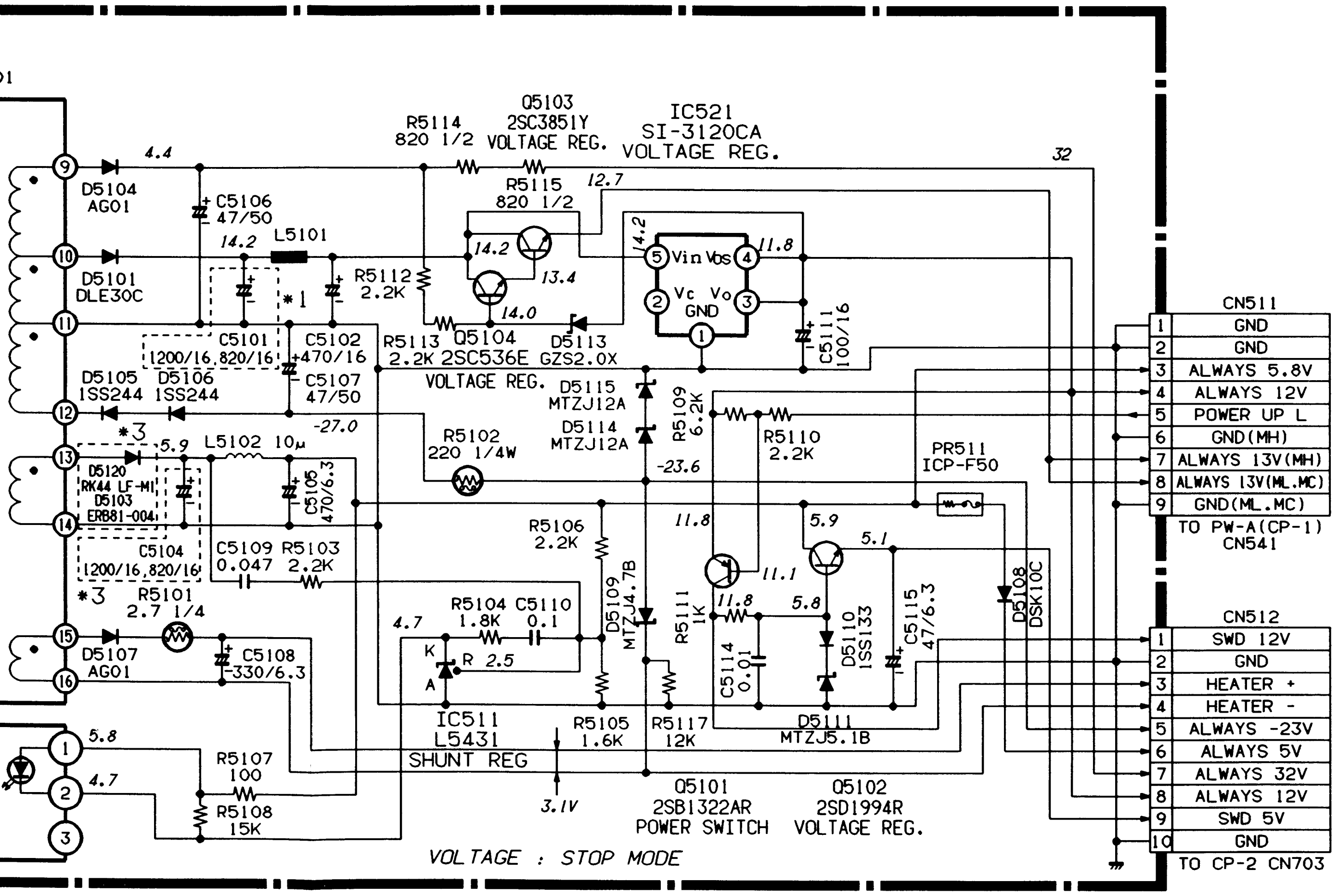
	*1 C5101	*2 C5104	*3
FM706 Q1	820/16	820/16	D5103
FM706 V1	1200/16	1200/16	D5120

/ POWER SUPPLY

IN
50Hz~60Hz

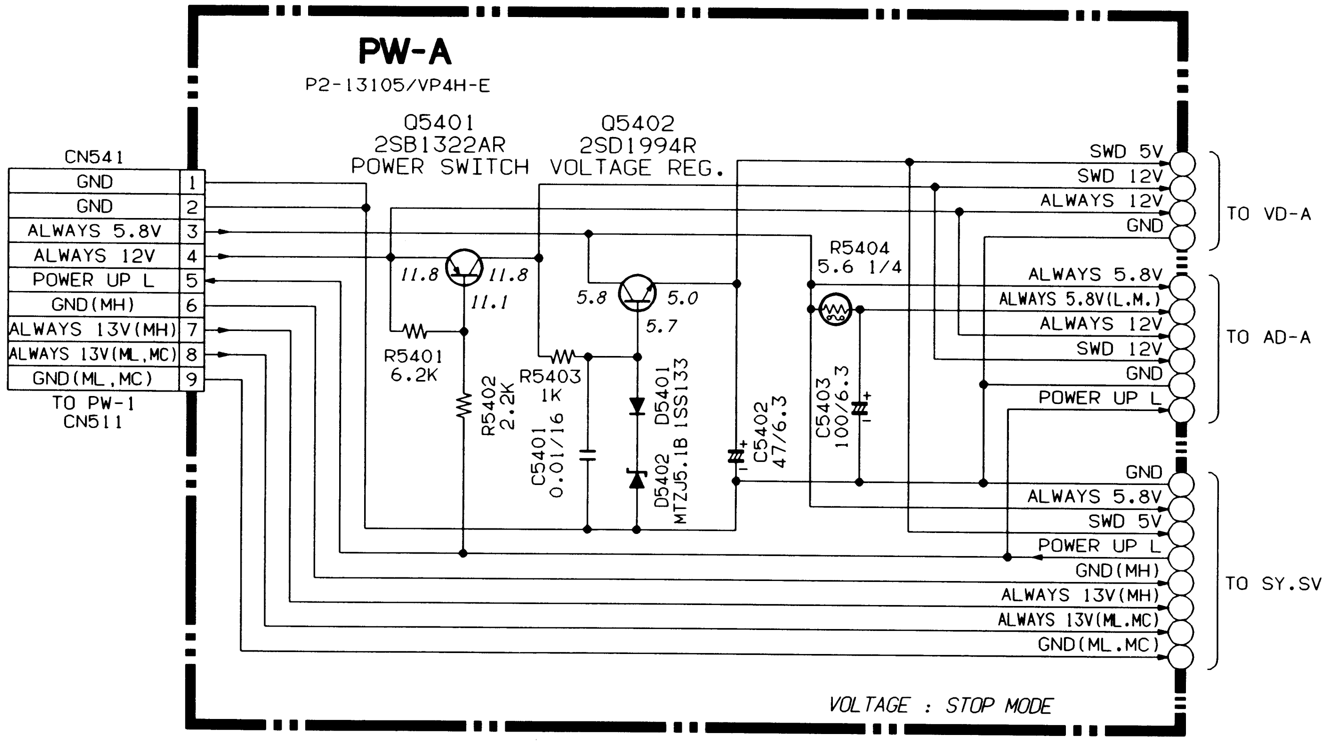
NOTE

	*1 C5101	*2 C5104	*3
FM706 Q1	820/16	820/16	D5103
FM706 V1	1200/16	1200/16	D5120



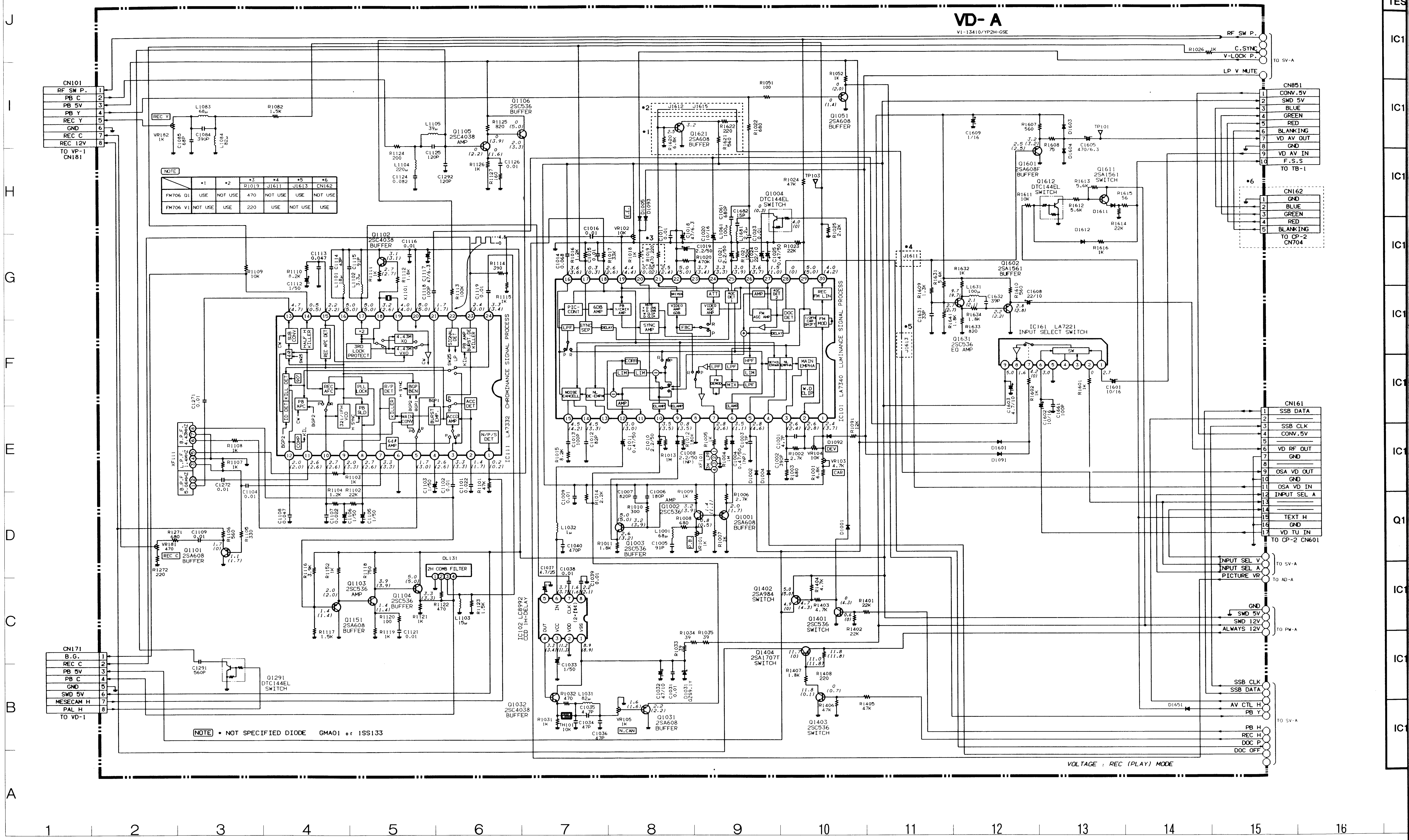
D5104 AG01
C5106 47/50
D5101 DLE30C
L5101
C5101 1200/16, 820/16
*1
C5102 +470/16
C5107 47/50
D5105 1SS244
D5106 1SS244
*3
D5120 RK44 LF-M1
D5103 ERB81-004
L5102 10μ
C5105 470/6.3
C5104 1200/16, 820/16
C5109 0.047
R5103 2.2K
R5101 2.7 1/4
D5107 AG01
C5108 330/6.3
R5107 100
R5108 15K
R5114 820 1/2
Q5103 2SC3851Y VOLTAGE REG.
R5115 820 1/2
R5112 2.2K
R5113 2.2K
Q5104 2SC536E VOLTAGE REG.
D5113 GZS2.0X
IC521 SI-3120CA VOLTAGE REG.
Vin Vos GND Vc Vo
C5111 100/16
D5115 MTZJ12A
D5114 MTZJ12A
R5102 220 1/4W
R5109 6.2K
R5110 2.2K
PR511 ICP-F50
R5106 2.2K
D5109 MTZJ4.7B
R5111 1K
C5114 0.01
D5110 1SS133
C5115 47/6.3
D5108 DSK10C
R5104 1.8K
C5110 0.1
K A R
IC511 L5431 SHUNT REG
R5105 1.6K
R5117 12K
D5111 MTZJ5.1B
Q5101 2SB1322AR POWER SWITCH
Q5102 2SD1994R VOLTAGE REG.
4.4
14.2
14.2
13.4
14.0
12.7
4.2
11.8
32
-27.0
5.9
-23.6
11.8
11.1
5.9
5.1
11.8
5.8
4.7
2.5
3.1V
5.8
4.7
CN511
1 GND
2 GND
3 ALWAYS 5.8V
4 ALWAYS 12V
5 POWER UP L
6 GND(MH)
7 ALWAYS 13V(MH)
8 ALWAYS 13V(ML.MC)
9 GND(ML.MC)
TO PW-A(CP-1) CN541
CN512
1 SWD 12V
2 GND
3 HEATER +
4 HEATER -
5 ALWAYS -23V
6 ALWAYS 5V
7 ALWAYS 32V
8 ALWAYS 12V
9 SWD 5V
10 GND
TO CP-2 CN703
VOLTAGE : STOP MODE

CP-1 (PW-A) NETZTEIL / POWER SUPPLY

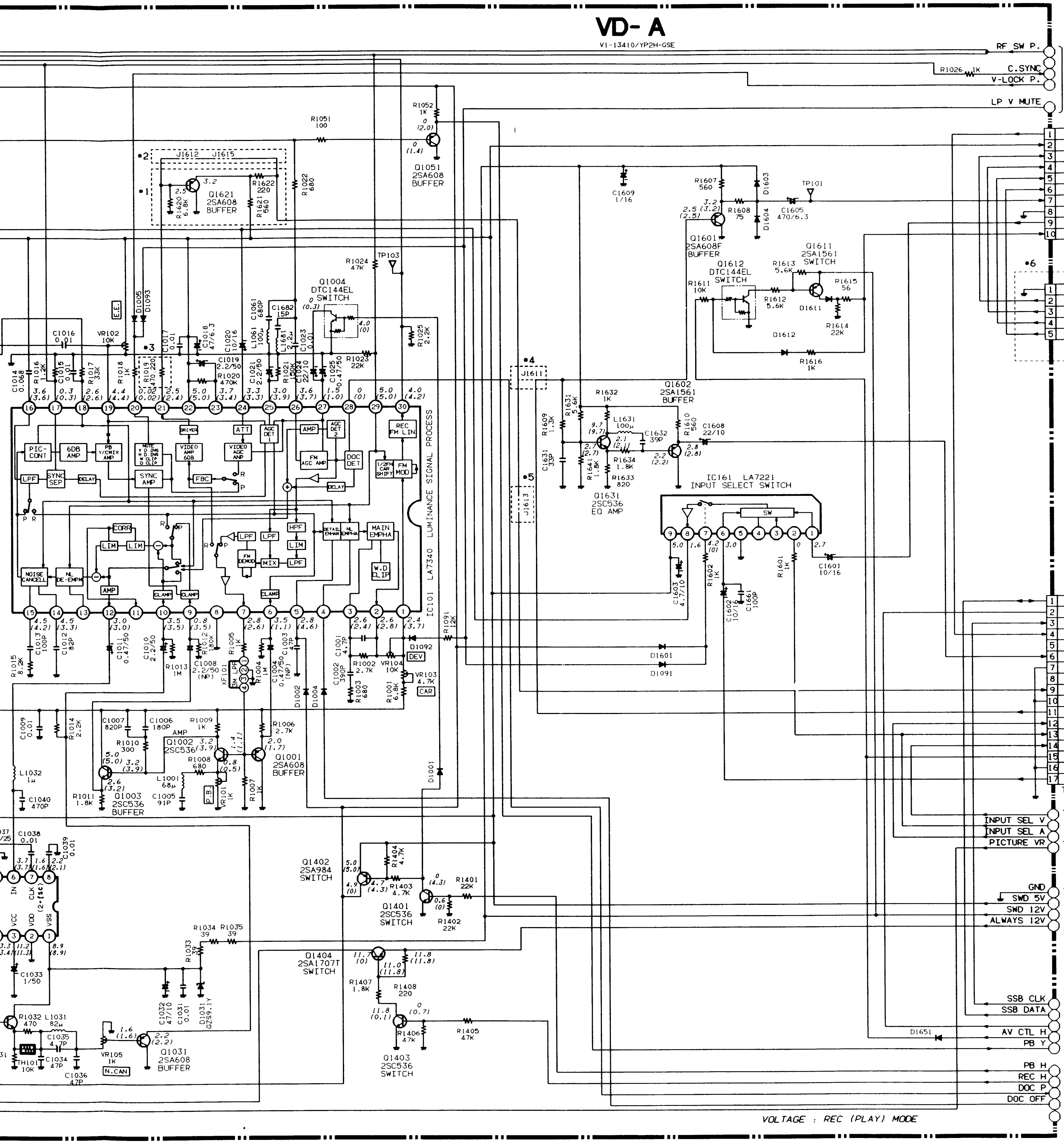


PW-A
P2-13105/VP4H-E
Q5401 2SB1322AR POWER SWITCH
Q5402 2SD1994R VOLTAGE REG.
CN541
1 GND
2 GND
3 ALWAYS 5.8V
4 ALWAYS 12V
5 POWER UP L
6 GND(MH)
7 ALWAYS 13V(MH)
8 ALWAYS 13V(ML,MC)
9 GND(ML,MC)
TO PW-1 CN511
11.8
11.8
11.1
5.8
5.0
5.7
R5401 6.2K
R5402 2.2K
R5403 1K
C5401 0.01/16
D5401 1SS133
D5402 MTZJ5.1B
C5402 47/6.3
R5404 5.6 1/4
C5403 100/6.3
SWD 5V
SWD 12V
ALWAYS 12V
GND
TO VD-A
ALWAYS 5.8V
ALWAYS 5.8V(L.M.)
ALWAYS 12V
SWD 12V
GND
POWER UP L
TO AD-A
GND
ALWAYS 5.8V
SWD 5V
POWER UP L
GND(MH)
ALWAYS 13V(MH)
ALWAYS 13V(ML.MC)
GND(ML.MC)
TO SY.SV
VOLTAGE : STOP MODE

CP-1 (VD-A) VIDEO


VD- A
V1-13410/YP2H-GSE
CN101
RF SW P.
PB C
PB 5V
PB Y
REC Y
GND
REC C
REC 12V
TO VP-1 CN181
NOTE
*1
*2
*3 R1019
*4 J1611
*5 J1613
*6 CN162
FM706 Q: USE, NOT USE, 470, NOT USE, USE, NOT USE
FM706 V: NOT USE, USE, 220, USE, NOT USE, USE
Q1106 2SC536 BUFFER
Q1105 2SC4038 AMP
Q1102 2SC4038 BUFFER
IC111 LA7332 CHROMINANCE SIGNAL PROCESS
IC101 LA7340 LUMINANCE SIGNAL PROCESS
Q1621 2SA608 BUFFER
Q1051 2SA608 BUFFER
Q1004 DTC144EL SWITCH
Q1601 2SA608F BUFFER
Q1612 DTC144EL SWITCH
Q1611 2SA1561 SWITCH
Q1602 2SA1561 BUFFER
Q1631 2SC536 EQ AMP
IC161 LA7221 INPUT SELECT SWITCH
CN851
CONV.5V
SWD 5V
BLUE
GREEN
RED
BLANKING
VD AV OUT
GND
VD AV IN
F.S.S
TO TB-1
CN162
GND
BLUE
GREEN
RED
BLANKING
TO CP-2 CN704
RF SW P.
C.SYNC
V-LOCK P.
LP V MUTE
TO SV-A
CN161
SSB DATA
SSB CLK
CONV.5V
VD RF OUT
GND
OSA VD OUT
GND
OSA VD IN
INPUT SEL A
TEXT H
GND
VD TU IN
TO CP-2 CN601
INPUT SEL V
INPUT SEL A
PICTURE VR
TO SV-A
TO AD-A
GND
SWD 5V
SWD 12V
ALWAYS 12V
TO PW-A
SSB CLK
SSB DATA
AV CTL H
PB Y
PB H
REC H
DOC P
DOC OFF
TO SV-A
Q1101 2SA608 BUFFER
Q1103 2SC536 AMP
Q1104 2SC536 BUFFER
Q1151 2SA608 BUFFER
DL131 2H COMB FILTER
IC102 LC8992 CCD 1H-DELAY
Q1003 2SC536 BUFFER
Q1002 2SC536 AMP
Q1001 2SA608 BUFFER
Q1032 2SC4038 BUFFER
Q1031 2SA608 BUFFER
Q1402 2SA984 SWITCH
Q1401 2SC536 SWITCH
Q1404 2SA1707T SWITCH
Q1403 2SC536 SWITCH
CN171
B.G.
REC C
PB 5V
PB C
GND
SWD 5V
MESECAM H
PAL H
TO VD-1
Q1291 DTC144EL SWITCH
NOTE • NOT SPECIFIED DIODE GMA01 or 1SS133
VOLTAGE : REC (PLAY) MODE
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
VID
TES
IC1

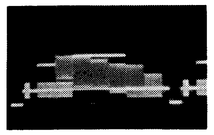
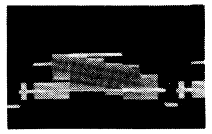
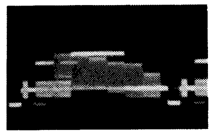
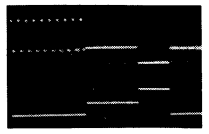
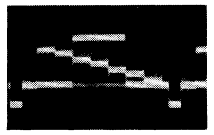
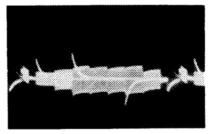
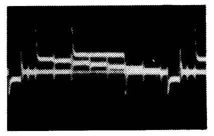
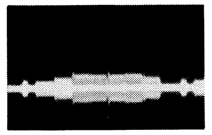
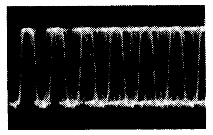
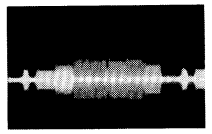
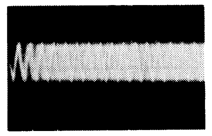
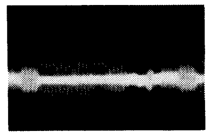
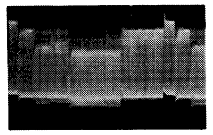
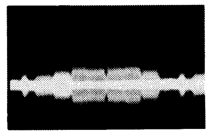
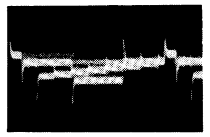
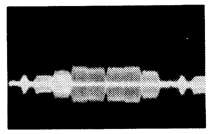
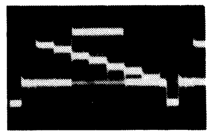
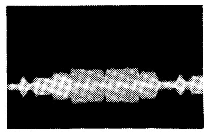
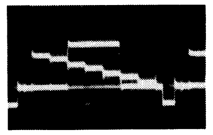
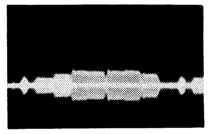
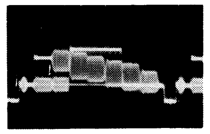
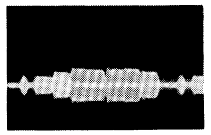
A) VIDEO



VD- A
V1-13410/YP2H-GSE
RF SW P.
C.SYNC
V-LOCK P.
LP V MUTE
TO SV-A
Q1051 2SA608 BUFFER
Q1621 2SA608 BUFFER
Q1004 DTC144EL SWITCH
Q1601 2SA608F BUFFER
Q1612 DTC144EL SWITCH
Q1611 2SA1561 SWITCH
Q1602 2SA1561 BUFFER
Q1631 2SC536 EQ AMP
IC161 LA7221 INPUT SELECT SWITCH
IC101 LA7340 LUMINANCE SIGNAL PROCESS
CN851
CONV.5V
SWD 5V
BLUE
GREEN
RED
BLANKING
VD AV OUT
GND
VD AV IN
F.S.S
TO TB-1
CN162
TO CP-2 CN704
CN161
SSB DATA
SSB CLK
VD RF OUT
OSA VD OUT
OSA VD IN
INPUT SEL A
TEXT H
VD TU IN
TO CP-2 CN601
Q1002 2SC536
Q1001 2SA608 BUFFER
Q1003 2SC536 BUFFER
Q1402 2SA984 SWITCH
Q1401 2SC536 SWITCH
Q1404 2SA1707T SWITCH
Q1403 2SC536 SWITCH
Q1031 2SA608 BUFFER
INPUT SEL V
INPUT SEL A
PICTURE VR
TO AD-A
GND
SWD 5V
SWD 12V
ALWAYS 12V
TO PW-A
SSB CLK
SSB DATA
AV CTL H
PB Y
PB H
REC H
DOC P
DOC OFF
VOLTAGE : REC (PLAY) MODE

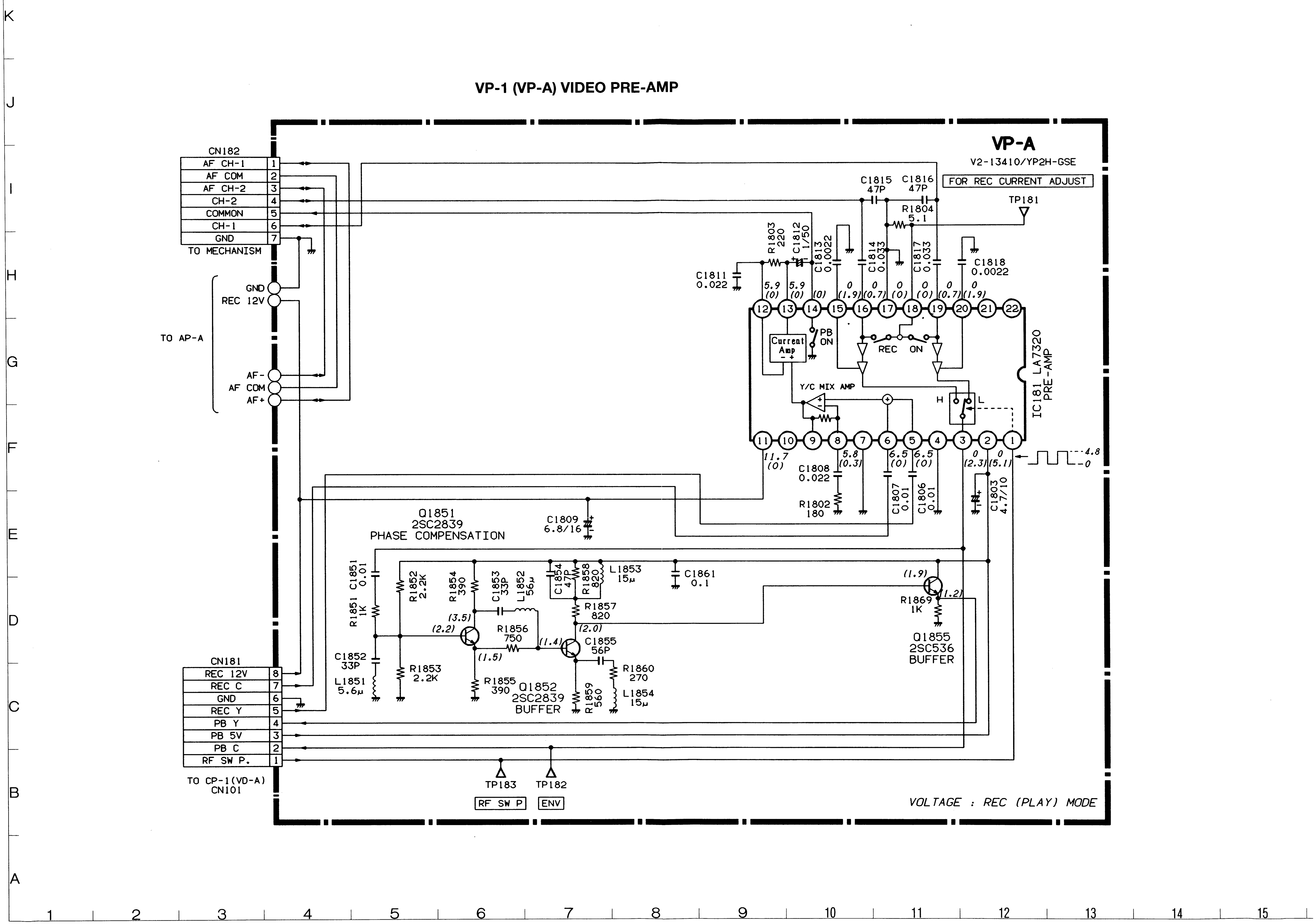
VIDEO

WF-V-SP

TEST LOCATION	WAVEFORM	MODE/LEVEL	TEST LOCATION	WAVEFORM	MODE/LEVEL
IC101 Pin 24		REC, EE 1 Vp-p	IC101 Pin 21		REC, EE 2 Vp-p
IC101 Pin 7		REC, EE 1 Vp-p	IC101 (UPPER) Pin 21 (LOWER) Pin 20		STILL (UPPER) 2 Vp-p (LOWER) 5 Vp-p
IC101 Pin 6		REC, EE 0.45 Vp-p	IC111 Pin 21		REC, EE 1 Vp-p
IC101 Pin 2		REC, EE 1.3 Vp-p	IC111 Pin 3		REC, EE 0.14 Vp-p
IC101 Pin 30		REC, EE 1.5 Vp-p	IC111 Pin 9		REC, EE 0.8Vp-p
IC101 Pin 26		PB 0.8 Vp-p	Q1105 Base		PB 0.1 Vp-p
IC101 Pin 7		PB 2.0 Vp-p	Q1106 Emitter		PB 1.2 Vp-p
Q1002 Base		PB 0.5 Vp-p	IC111 Pin 7		PB 0.5 Vp-p
IC101 Pin 9		PB 0.6 Vp-p	IC111 Pin 5		PB 1.2 Vp-p
IC101 Pins 10/12		PB 0.5 Vp-p	IC111 Pin 24		PB 0.22 Vp-p
IC101 Pin 21		PB 2 Vp-p	IC111 Pin 23		PB 0.6 Vp-p

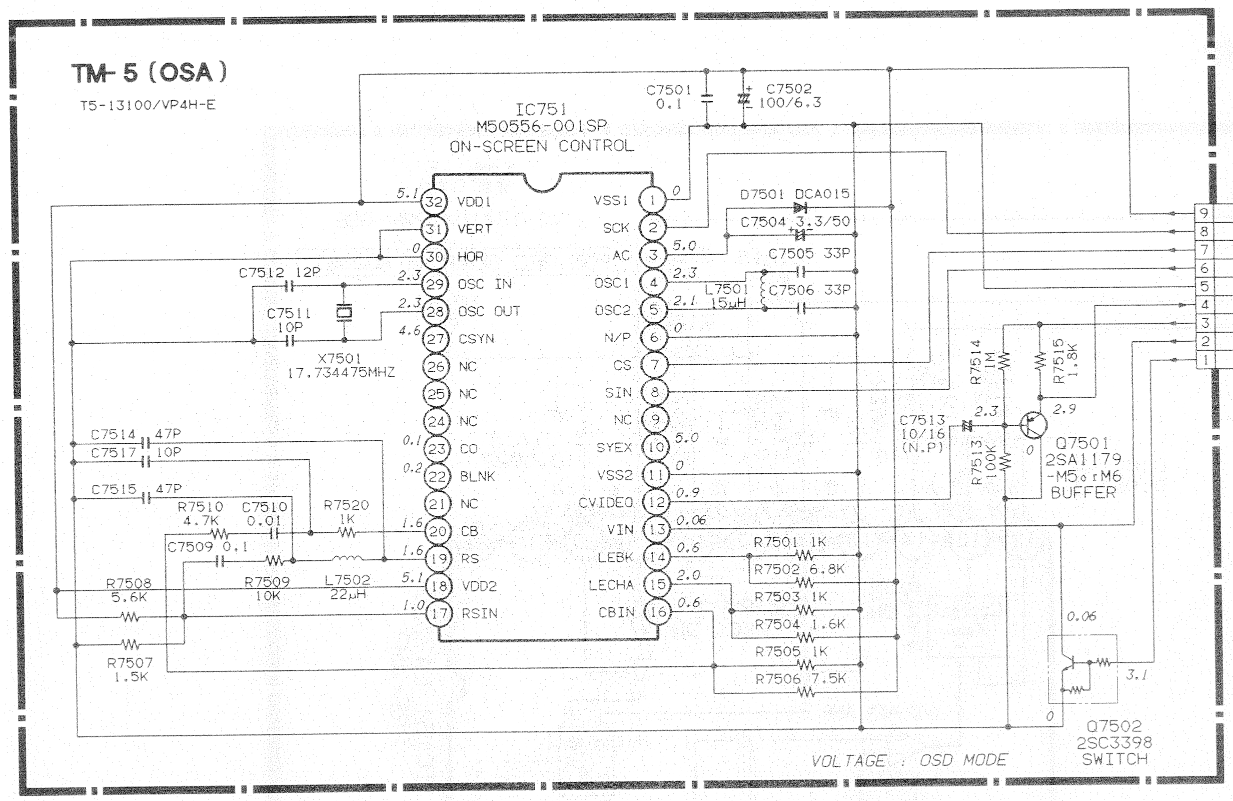
Schaltpläne u. Platinen FM706Q1/FM706V1

VP-1 (VP-A) VIDEO PRE-AMP

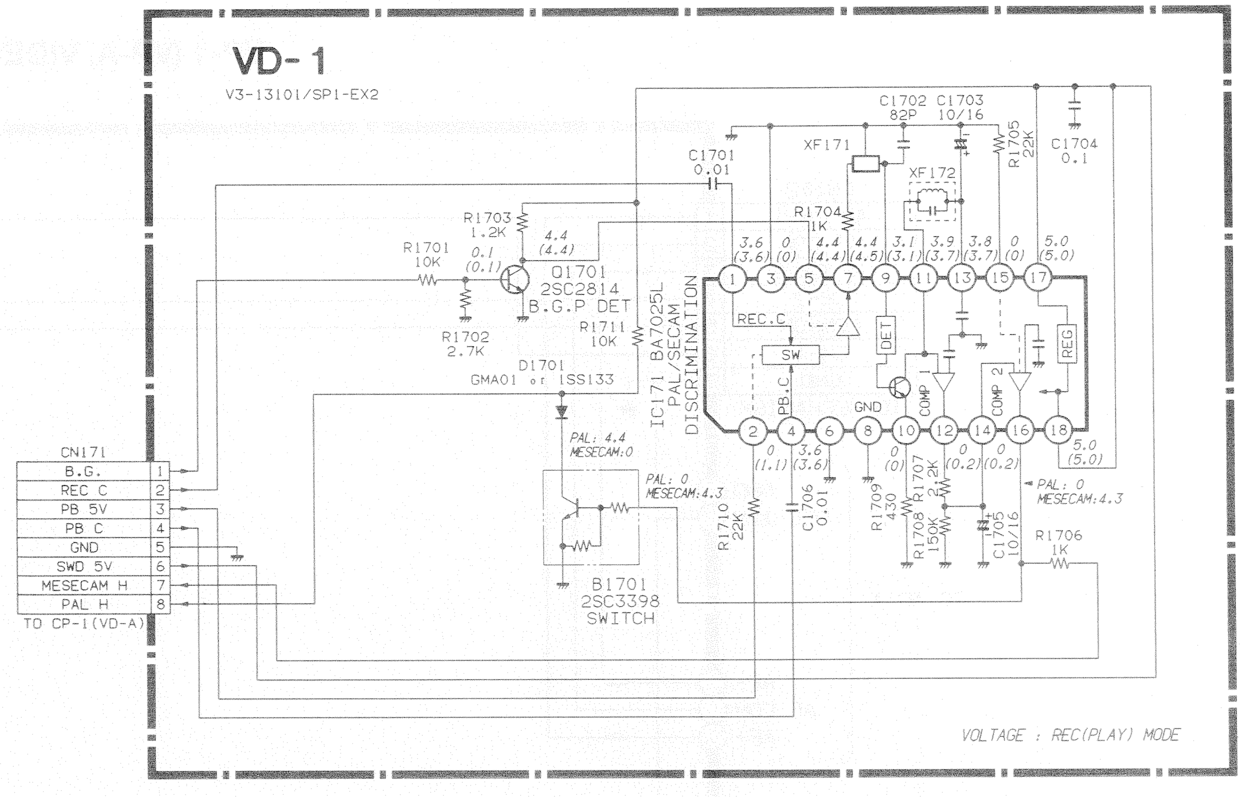


VP-A
V2-13410/YP2H-GSE
FOR REC CURRENT ADJUST
TP181
CN182
AF CH-1 1
AF COM 2
AF CH-2 3
CH-2 4
COMMON 5
CH-1 6
GND 7
TO MECHANISM
GND
REC 12V
TO AP-A
AF-
AF COM
AF+
C1815 47P
C1816 47P
R1804 5.1
R1803 220
C1812 1/50
C1813 0.0022
C1814 0.033
C1817 0.033
C1818 0.0022
C1811 0.022
Current Amp
PB ON
REC ON
Y/C MIX AMP
H L
IC181 LA7320 PRE-AMP
C1808 0.022
R1802 180
C1807 0.01
C1806 0.01
C1803 4.7/10
C1809 6.8/16
Q1851 2SC2839 PHASE COMPENSATION
R1851 1K
C1851 0.01
R1852 2.2K
R1854 390
C1853 33P
L1852 56μ
C1854 47P
R1858 820
L1853 15μ
C1861 0.1
R1857 820
R1856 750
C1855 56P
C1852 33P
L1851 5.6μ
R1853 2.2K
R1855 390
Q1852 2SC2839 BUFFER
R1859 560
R1860 270
L1854 15μ
R1869 1K
Q1855 2SC536 BUFFER
CN181
REC 12V 8
REC C 7
GND 6
REC Y 5
PB Y 4
PB 5V 3
PB C 2
RF SW P. 1
TO CP-1(VD-A) CN101
TP183
TP182
RF SW P
ENV
VOLTAGE : REC (PLAY) MODE
K J I H G F E D C B A
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

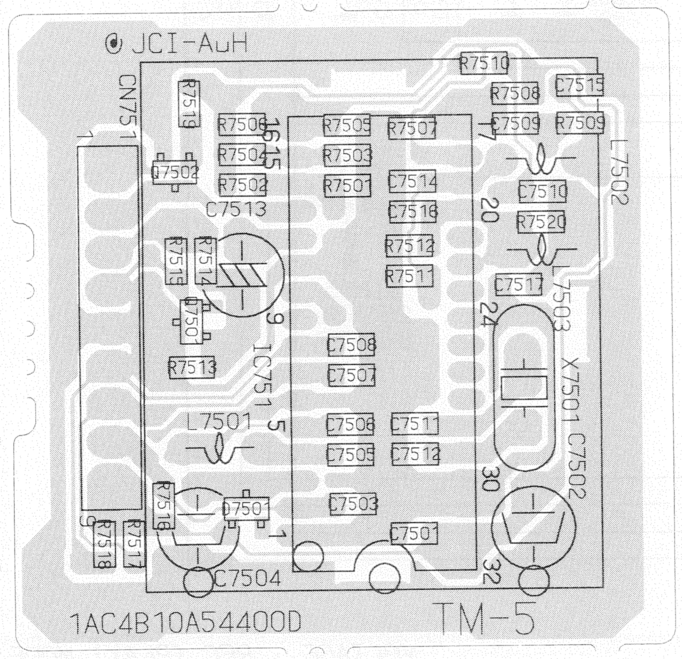
TM-5 TIMER ON-SCREEN (OSA/OSD)
(FM706Q1)


TM-5 (OSA)
T5-13100/VP4H-E
IC751
M50556-001SP
ON-SCREEN CONTROL
C7501 0.1
C7502 100/6.3
VDD1
VERT
HOR
OSC IN
OSC OUT
CSYN
NC
CO
BLNK
CB
RS
VDD2
RSIN
VSS1
SCK
AC
OSC1
OSC2
N/P
CS
SIN
SYEX
VSS2
CVIDEO
VIN
LEBK
LECHA
CBIN
D7501 DCA015
C7504 3.3/50
C7505 33P
C7506 33P
L7501 15μH
C7512 12P
C7511 10P
X7501 17.734475MHZ
C7514 47P
C7517 10P
C7515 47P
R7510 4.7K
C7510 0.01
R7520 1K
C7509 0.1
R7508 5.6K
R7509 10K
L7502 22μH
R7507 1.5K
R7501 1K
R7502 6.8K
R7503 1K
R7504 1.6K
R7505 1K
R7506 7.5K
C7513 10/16 (N.P)
R7513 100K
R7514 1M
R7515 1.8K
Q7501 2SA1179 -M5 or M6 BUFFER
Q7502 2SC3398 SWITCH
CN751
ALWAYS 5V
OSA CLK
OSA CS
OSA DATA
GND
VD OUT
SWD 12V
VD IN
B.B.ON
TO CP-2
VOLTAGE : OSD MODE

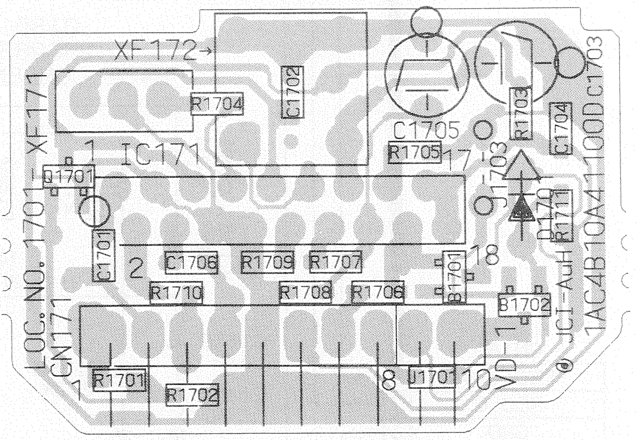
VD-1 MESECAM DISCRIMINATION
(FM706Q1)


VD-1
V3-13101/SP1-EX2
C1702 82P
C1703 10/16
C1704 0.1
R1705 22K
XF171
XF172
C1701 0.01
R1703 1.2K
R1701 10K
R1702 2.7K
R1704 1K
R1711 10K
Q1701 2SC2814 B.G.P DET
D1701 GMA01 or 1SS133
IC171 BA7025L PAL/SECAM DISCRIMINATION
REC.C
SW
PB.C
GND
DET
COMP
COMP 2
REG
B1701 2SC3398 SWITCH
R1710 22K
C1706 0.01
R1709 430
R1708 150K
R1707 2.2K
C1705 10/16
R1706 1K
PAL: 4.4 MESECAM: 0
PAL: 0 MESECAM: 4.3
CN171
B.G.
REC C
PB 5V
PB C
GND
SWD 5V
MESECAM H
PAL H
TO CP-1(VD-A)
VOLTAGE : REC(PLAY) MODE

TM-5 P.C.B.


JCI-AuH
CN751
IC751
L7501
L7502
L7503
X7501
C7502
C7504
C7513
1AC4B10A54400D
TM-5

VD-1 P.C.B.


XF172
XF171
IC171
C1705
C1702
C1703
C1704
LOC. NO. 1701
CN171
JCI-AuH
1AC4B10A41100D
VD-1

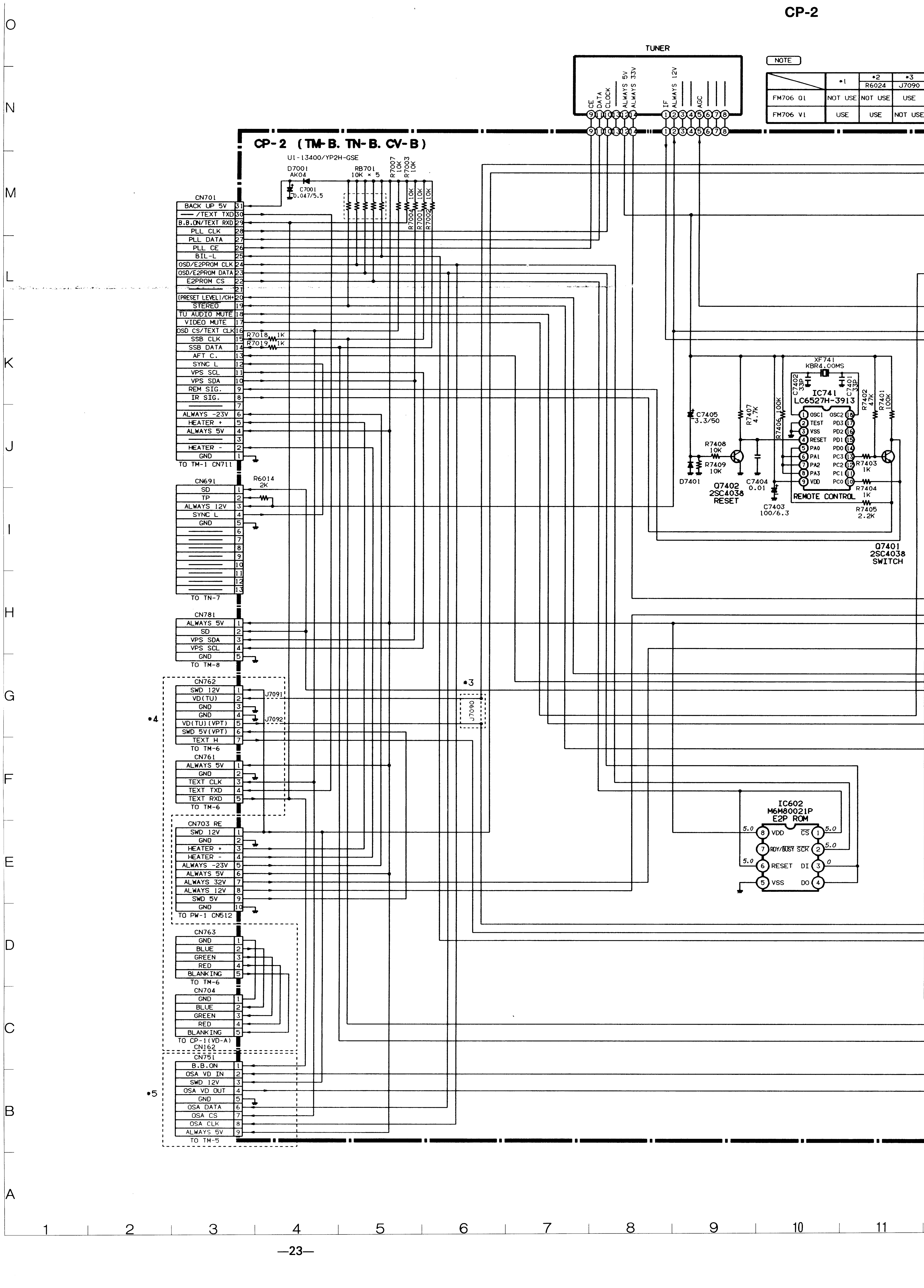
K J I H G F E D C B A

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

CP-2

NOTE

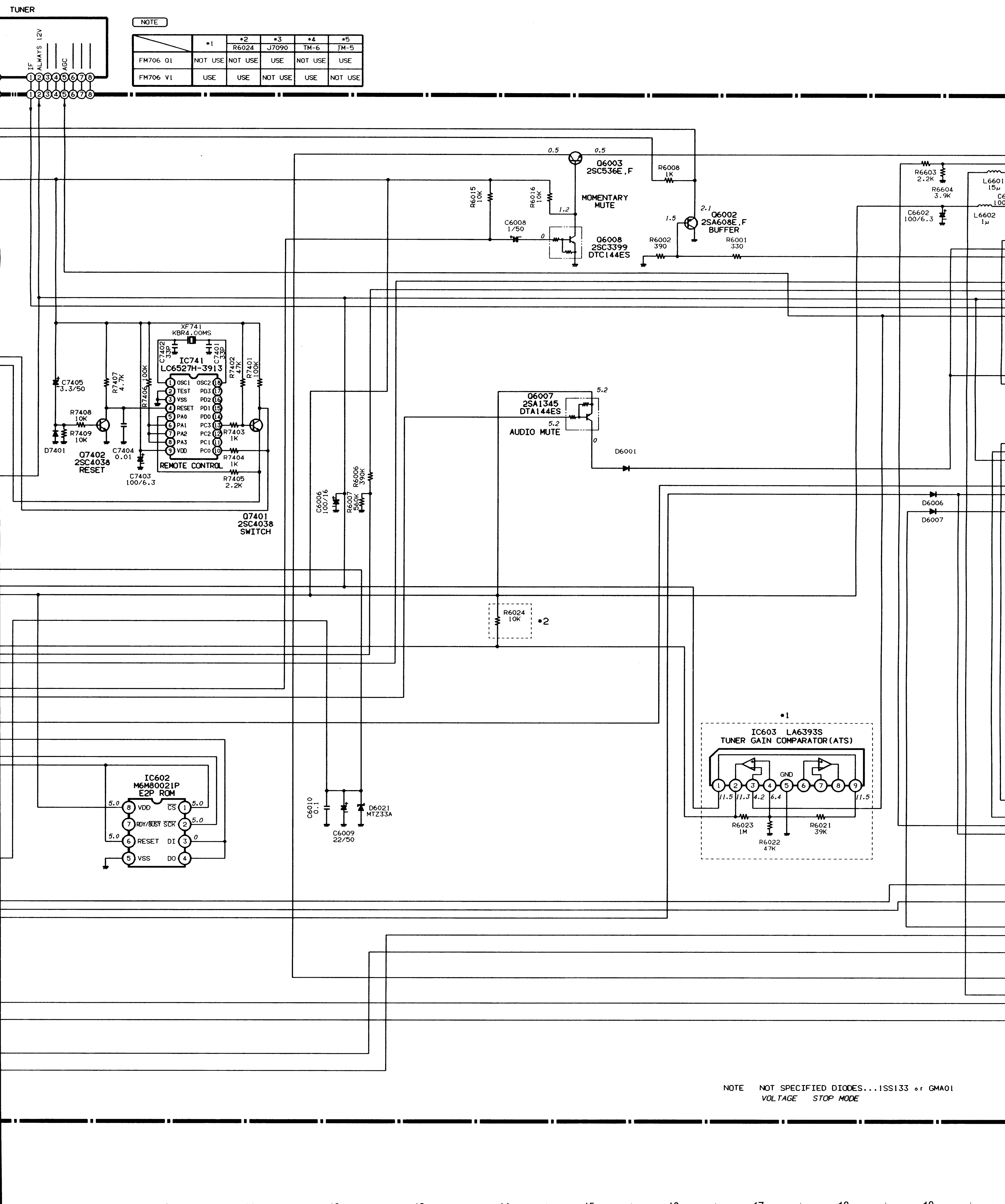
	*1	*2 R6024	*3 J7090
FM706 Q1	NOT USE	NOT USE	USE
FM706 V1	USE	USE	NOT USE


O
N
M
L
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
TUNER
CE
DATA
CLOCK
ALWAYS 5V
ALWAYS 33V
IF
ALWAYS 12V
AGC
CP-2 (TM-B. TN-B. CV-B)
U1-13400/YP2H-GSE
D7001
AK04
C7001
0.047/5.5
RB701
10K × 5
R7007 10K
R7003 10K
R7004 10K
R7001 10K
R7002 10K
CN701
BACK UP 5V 31
/TEXT TXD 30
B.B.ON/TEXT RXD 29
PLL CLK 28
PLL DATA 27
PLL CE 26
BIL-L 25
OSD/E2PROM CLK 24
OSD/E2PROM DATA 23
E2PROM CS 22
21
(PRESET LEVEL)/CH+ 20
STEREO 19
TU AUDIO MUTE 18
VIDEO MUTE 17
OSD CS/TEXT CLK 16
SSB CLK 15
SSB DATA 14
AFT C. 13
SYNC L 12
VPS SCL 11
VPS SDA 10
REM SIG. 9
IR SIG. 8
7
ALWAYS -23V 6
HEATER + 5
ALWAYS 5V 4
3
HEATER - 2
GND 1
TO TM-1 CN711
R7018 1K
R7019 1K
CN691
SD 1
TP 2
ALWAYS 12V 3
SYNC L 4
GND 5
6
7
8
9
10
11
12
13
TO TN-7
R6014
2K
CN781
ALWAYS 5V 1
SD 2
VPS SDA 3
VPS SCL 4
GND 5
TO TM-8
*4
CN762
SWD 12V 1
VD(TU) 2
GND 3
GND 4
VD(TU)(VPT) 5
SWD 5V(VPT) 6
TEXT H 7
TO TM-6
J7091
J7092
*3
J7090
CN761
ALWAYS 5V 1
GND 2
TEXT CLK 3
TEXT TXD 4
TEXT RXD 5
TO TM-6
CN703 RE
SWD 12V 1
GND 2
HEATER + 3
HEATER - 4
ALWAYS -23V 5
ALWAYS 5V 6
ALWAYS 32V 7
ALWAYS 12V 8
SWD 5V 9
GND 10
TO PW-1 CN512
CN763
GND 1
BLUE 2
GREEN 3
RED 4
BLANKING 5
TO TM-6
CN704
GND 1
BLUE 2
GREEN 3
RED 4
BLANKING 5
TO CP-1(VD-A) CN162
*5
CN751
B.B.ON 1
OSA VD IN 2
SWD 12V 3
OSA VD OUT 4
GND 5
OSA DATA 6
OSA CS 7
OSA CLK 8
ALWAYS 5V 9
TO TM-5
XF741
KBR4.00MS
C7402 33P
C7401 33P
IC741
LC6527H-3913
OSC1
TEST
VSS
RESET
PA0
PA1
PA2
PA3
VDD
OSC2
PD3
PD2
PD1
PD0
PC3
PC2
PC1
PC0
REMOTE CONTROL
R7406 100K
R7402 47K
R7401 100K
R7403 1K
R7404 1K
R7405 2.2K
C7405
3.3/50
R7407
4.7K
R7408
10K
R7409
10K
D7401
Q7402
2SC4038
RESET
C7404
0.01
C7403
100/6.3
Q7401
2SC4038
SWITCH
IC602
M6M80021P
E2P ROM
VDD
CS
RDY/BUSY SCK
RESET
DI
VSS
DO
5.0
5.0
5.0
5.0
0

CP-2

NOTE

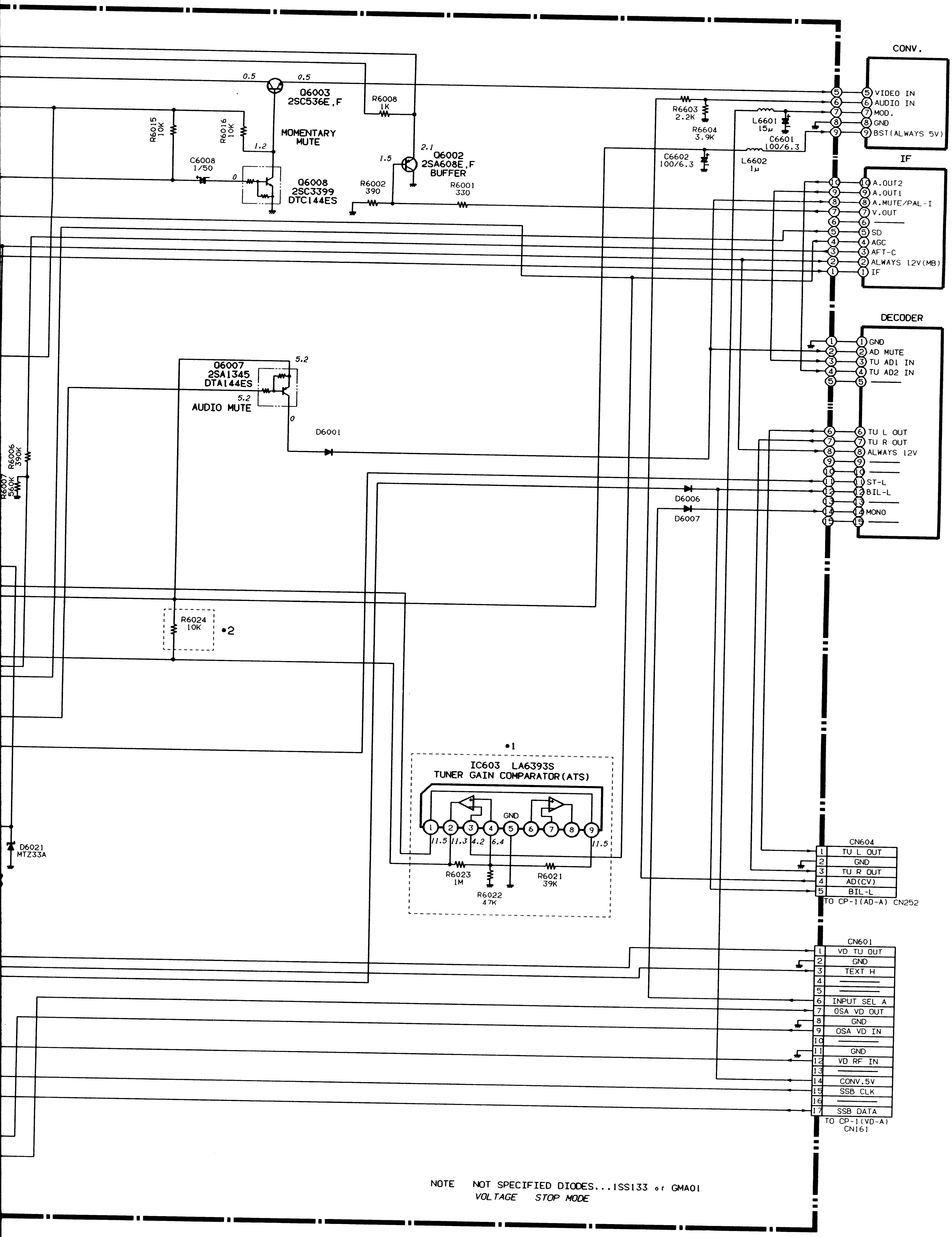
	•1	•2 R6024	•3 J7090	•4 TM-6	•5 TM-5
FM706 01	NOT USE	NOT USE	USE	NOT USE	USE
FM706 V1	USE	USE	NOT USE	USE	NOT USE



TUNER
IF
ALWAYS 12V
AGC
Q6003
2SC536E,F
0.5
0.5
R6008
1K
R6015
10K
R6016
10K
MOMENTARY
MUTE
1.2
C6008
1/50
0
Q6008
2SC3399
DTC144ES
2.1
1.5
Q6002
2SA608E,F
BUFFER
R6002
390
R6001
330
R6603
2.2K
R6604
3.9K
C6602
100/6.3
L6601
15μ
L6602
1μ
XF741
KBR4.00MS
C7402
33P
C7401
33P
IC741
LC6527H-3913
R7402
47K
R7401
100K
R7406
100K
OSC1
TEST
VSS
RESET
PA0
PA1
PA2
PA3
VDD
OSC2
PD3
PD2
PD1
PD0
PC3
PC2
PC1
PC0
REMOTE CONTROL
R7403
1K
R7404
1K
R7405
2.2K
C7405
3.3/50
R7407
4.7K
R7408
10K
R7409
10K
D7401
Q7402
2SC4038
RESET
C7404
0.01
C7403
100/6.3
Q7401
2SC4038
SWITCH
Q6007
2SA1345
DTA144ES
5.2
5.2
AUDIO MUTE
0
D6001
C6006
100/16
R6007
560K
R6006
390K
D6006
D6007
R6024
10K
•2
•1
IC603 LA6393S
TUNER GAIN COMPARATOR(ATS)
GND
11.5
11.3
4.2
6.4
11.5
R6023
1M
R6022
47K
R6021
39K
IC602
M6M80021P
E2P ROM
5.0
VDD
CS
5.0
RDY/BUSY SCK
5.0
5.0
RESET
DI
0
VSS
DO
C6010
0.1
C6009
22/50
D6021
MTZ33A
9
10
11
12
13
14
15
16
17
18
19

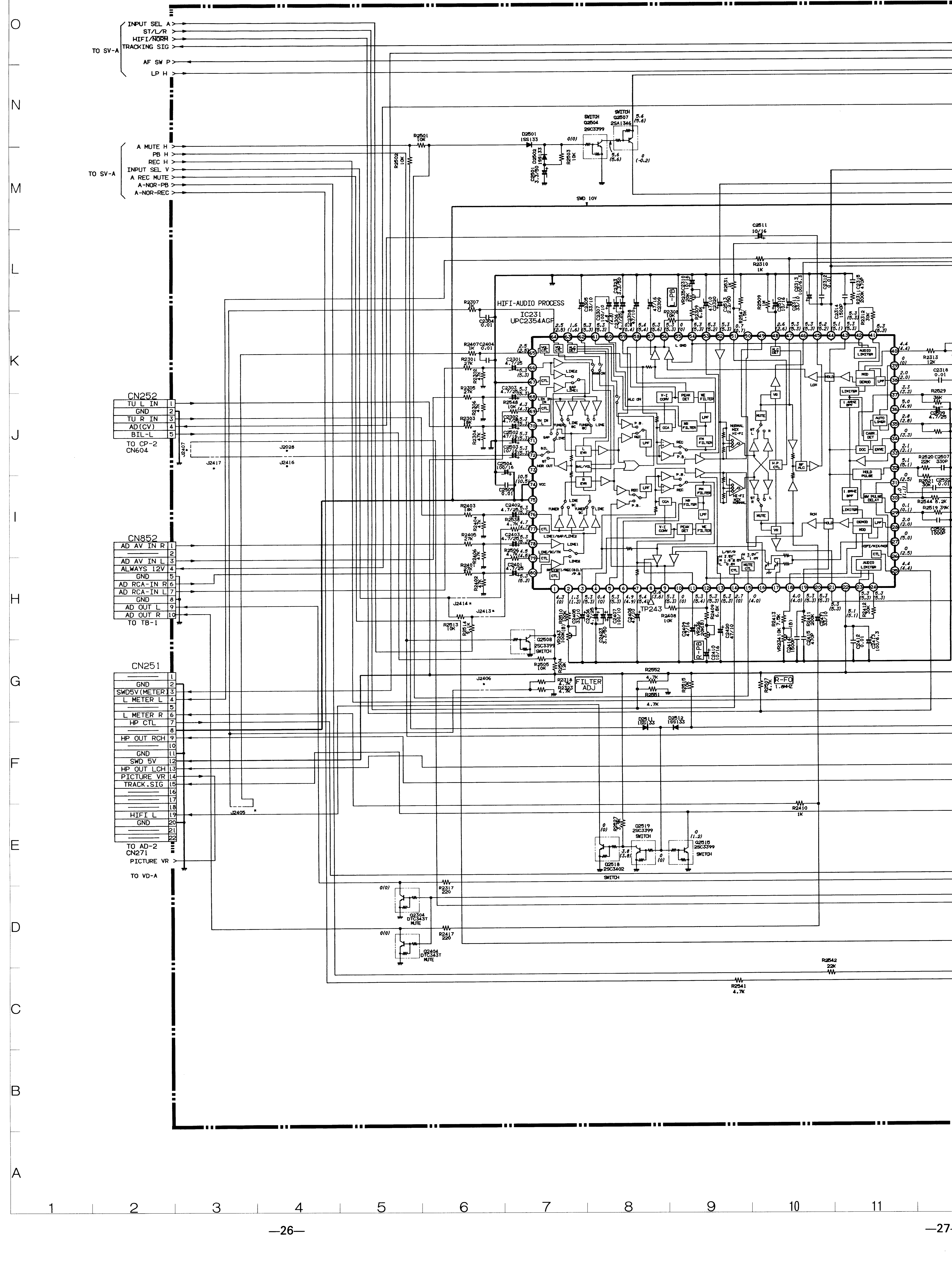
NOTE NOT SPECIFIED DIODES...1SS133 or GMA01
VOLTAGE STOP MODE

*5
TM-5
USE
T USE

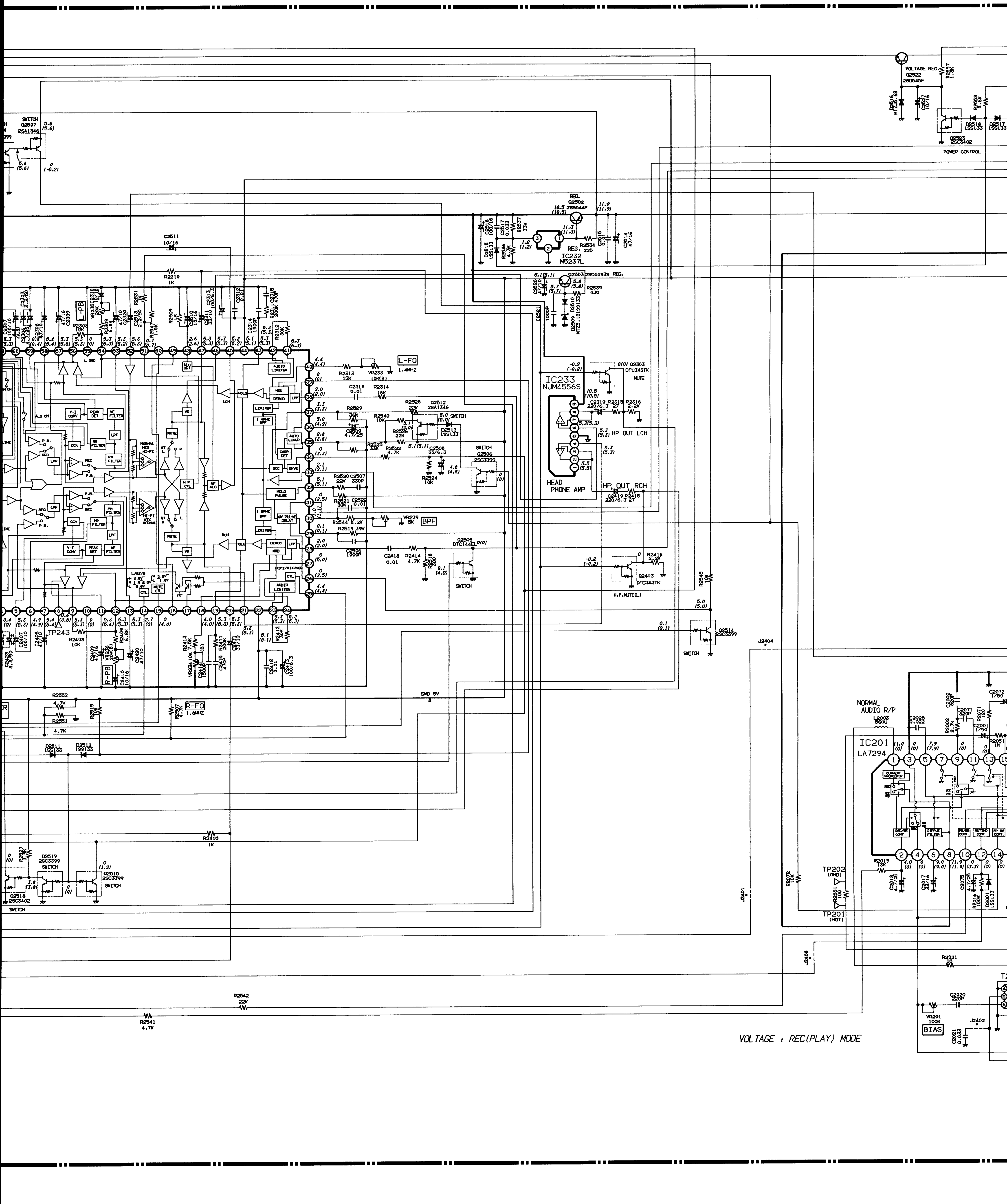

Q6003
2SC536E,F
0.5
0.5
MOMENTARY MUTE
R6015 10K
R6016 10K
1.2
C6008 1/50
0
Q6008
2SC3399
DTC144ES
R6008 1K
2.1
1.5
Q6002
2SA608E,F
BUFFER
R6002 390
R6001 330
R6603 2.2K
R6604 3.9K
L6601 15μ
C6601 100/6.3
C6602 100/6.3
L6602 1μ
CONV.
VIDEO IN
AUDIO IN
MOD.
GND
BST(ALWAYS 5V)
IF
A.OUT2
A.OUT1
A.MUTE/PAL-I
V.OUT
SD
AGC
AFT-C
ALWAYS 12V(MB)
IF
DECODER
GND
AD MUTE
TU AD1 IN
TU AD2 IN
TU L OUT
TU R OUT
ALWAYS 12V
ST-L
BIL-L
MONO
Q6007
2SA1345
DTA144ES
5.2
5.2
AUDIO MUTE
0
D6001
D6006
D6007
R6006 390K
R6007 560K
R6024 10K
*2
*1
IC603 LA6393S
TUNER GAIN COMPARATOR(ATS)
GND
11.5
11.3
4.2
6.4
11.5
R6023 1M
R6022 47K
R6021 39K
D6021 MTZ33A
CN604
TU L OUT
GND
TU R OUT
AD(CV)
BIL-L
TO CP-1(AD-A) CN252
CN601
VD TU OUT
GND
TEXT H
INPUT SEL A
OSA VD OUT
GND
OSA VD IN
GND
VD RF IN
CONV.5V
SSB CLK
SSB DATA
TO CP-1(VD-A) CN161

NOTE NOT SPECIFIED DIODES...1SS133 or GMA01
VOLTAGE STOP MODE

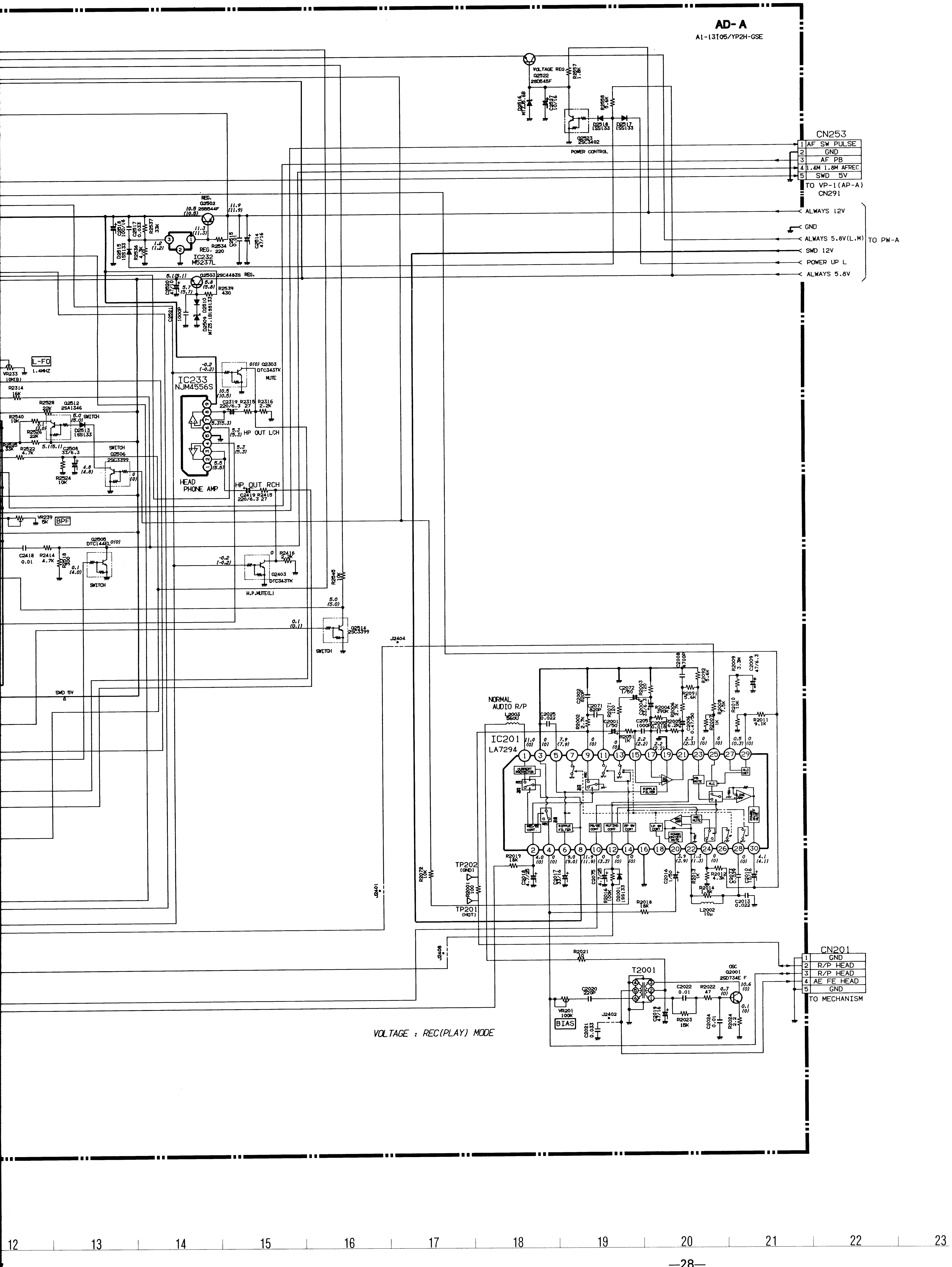
13 14 15 16 17 18 19 20 21 22 23


INPUT SEL A
ST/L/R
HIFI/NORM
TRACKING SIG
TO SV-A
AF SW P
LP H
A MUTE H
PB H
REC H
INPUT SEL V
A REC MUTE
A-NOR-PB
A-NOR-REC
TO SV-A
SWD 10V
SWITCH Q2504 2SC3399
SWITCH Q2507 2SA1346
D2501 1SS133
D2502 1SS133
R2501 10K
R2502 10K
R2503 10K
HIFI-AUDIO PROCESS
IC231
UPC2354AGF
CN252
TU L IN
GND
TU R IN
AD(CV)
BIL-L
TO CP-2 CN604
J2407
J2417
J2028
J2416
CN852
AD AV IN R
AD AV IN L
ALWAYS 12V
GND
AD RCA-IN R
AD RCA-IN L
GND
AD OUT L
AD OUT R
TO TB-1
J2414
J2413
R2513 10K
Q2508 2SC3399 SWITCH
TP243
R-PB
FILTER ADJ
R-FO 1.8MHZ
J2406
R2552 4.7K
R2551 4.7K
D2511 1SS133
D2512 1SS133
CN251
GND
SWD5V(METER)
L METER L
L METER R
HP CTL
HP OUT RCH
GND
SWD 5V
HP OUT LCH
PICTURE VR
TRACK.SIG
HIFI L
GND
TO AD-2 CN271
PICTURE VR
TO VD-A
J2405
R2410 1K
Q2519 2SC3399 SWITCH
Q2518 2SC3402 SWITCH
Q2515 2SC3399 SWITCH
R2317 220
Q2304 DTC343T MUTE
R2417 220
Q2404 DTC343T MUTE
R2542 22K
R2541 4.7K
R2313 12K
R2520 22K
C2507 330P
R2544 8.2K
R2519 39K
R2629 36K
C2318 0.01
C2511 10/16
R2310 1K
O
N
M
L
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

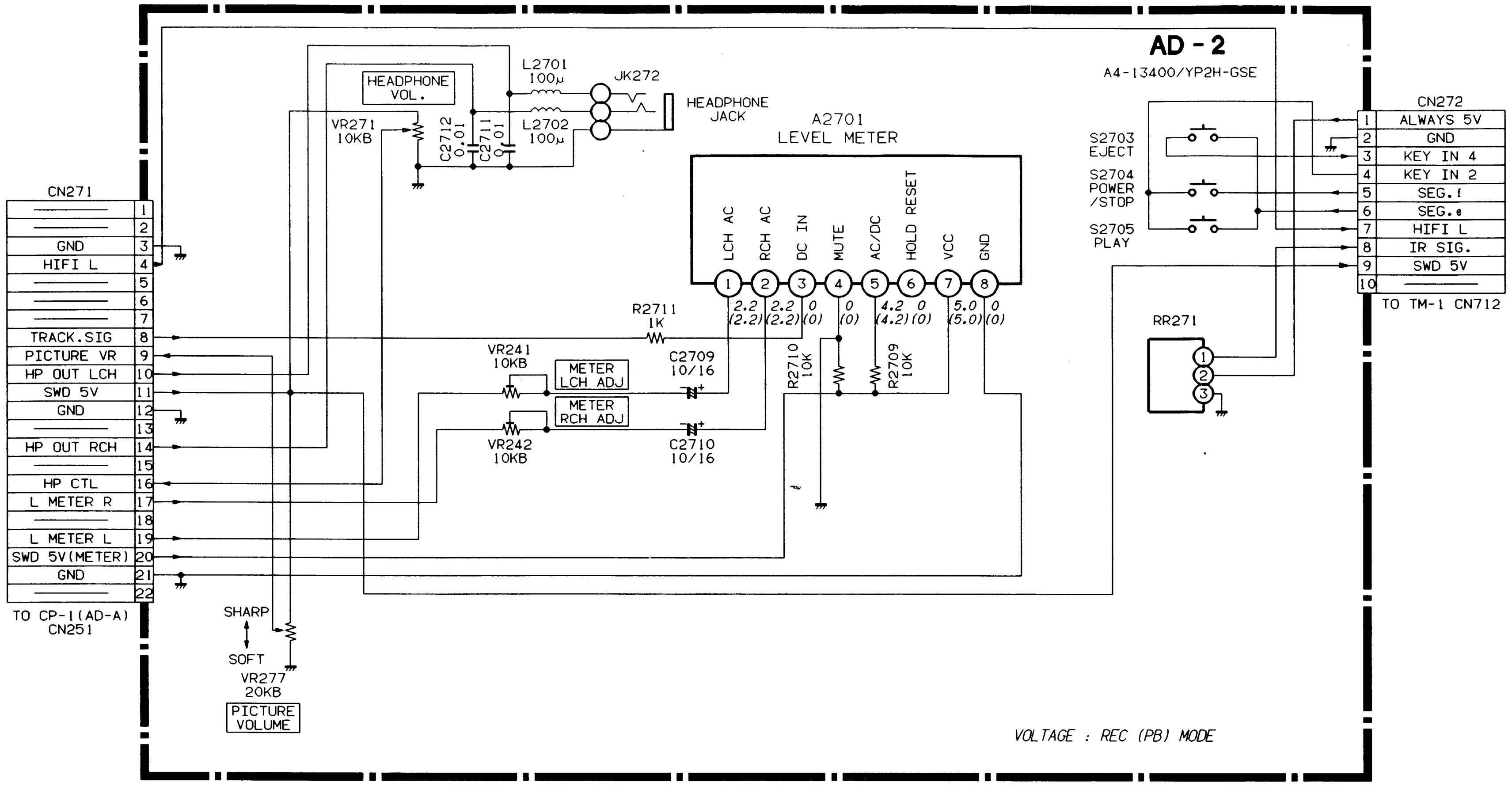
CP-1 (AD-A) AUDIO


SWITCH Q2507 2SA1346
VOLTAGE REG Q2522 2SD545F
POWER CONTROL Q2523 2SC3402
REG. Q2502 2SB844F
REG. IC232 M5237L
Q2503 2SC4483S REG.
IC233 NJM4556S
HEAD PHONE AMP
HP OUT LCH
HP OUT RCH
Q2303 DTC343TK MUTE
Q2512 2SA1346 SWITCH
SWITCH Q2506 2SC3399
Q2505 DTC144EL SWITCH
Q2403 DTC343TK H.P.MUTE(L)
Q2514 2SC3399 SWITCH
L-FO 1.4MHZ
R-FO 1.8MHZ
BPF
L-PB
R-PB
TP243
VR233 10K(B)
VR239 5K
AUDIO LIMITER
DEMOD
MOD
LPF
LIMITER
NR FILTER
FM FILTER
PEAK DET
WE FILTER
V-I CONV
CCA
NORMAL MIX HI-FI
HI-FI MIX NORMAL
MUTE
VR
H.P CTL
ALC
AUTO LIMITER
CARR. DET
DOC
ENVE
HOLD PULSE
SW PULSE DELAY
1.8MHZ BPF
1.4MHZ BPF
SWD 5V
Q2519 2SC3399 SWITCH
Q2515 2SC3399 SWITCH
Q2518 2SC3402 SWITCH
R2410 1K
R2542 22K
R2541 4.7K
NORMAL AUDIO R/P
IC201 LA7294
L2003 560U
TP202 (GND)
TP201 (HOT)
VR201 100K
BIAS
J2401
J2402
J2404
J2408
RIPPLE FILTER
MUTING CONT
8
9
10
11
12
13
14
15
16
17
18
19

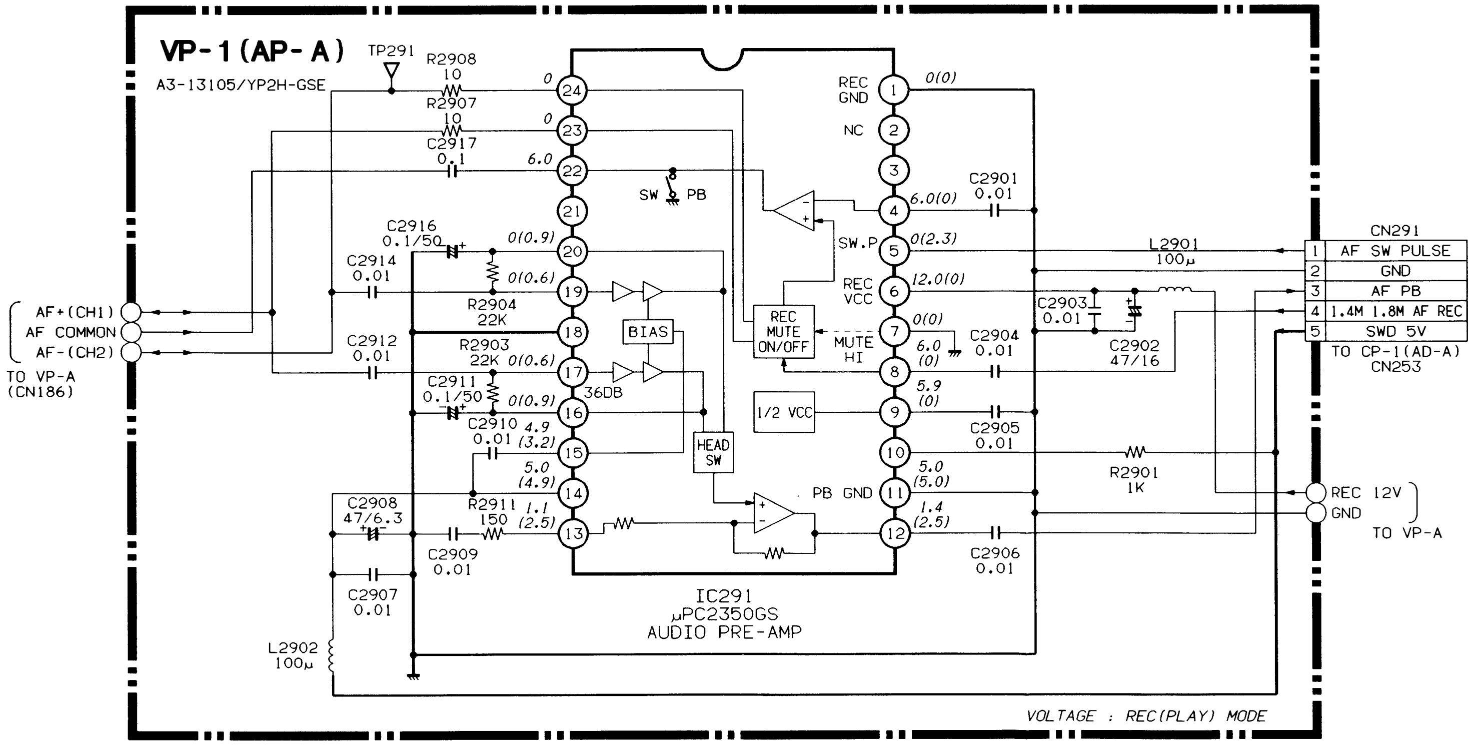
VOLTAGE : REC(PLAY) MODE


AD-A
A1-13105/YP2H-GSE
VOLTAGE REG. Q2522 2SD545F
POWER CONTROL Q2523 2SC3402
CN253
1 AF SW PULSE
2 GND
3 AF PB
4 1.4M 1.8M AFREC
5 SWD 5V
TO VP-1(AP-A) CN291
ALWAYS 12V
GND
ALWAYS 5.8V(L.M)
SWD 12V
POWER UP L
ALWAYS 5.8V
TO PW-A
REG. Q2502 2SB644F
IC232 M5237L
Q2503 2SC4483S REG.
L-FO 1.4MHZ
VR233 10K(B)
IC233 NJM4556S
HEAD PHONE AMP
HP OUT LCH
HP OUT RCH
Q2303 DTC343TK MUTE
Q2512 2SA1346 SWITCH
SWITCH Q2506 2SC3399
VR239 5K BPF
Q2508 DTC144EL SWITCH
Q2403 DTC343TK H.P.MUTE(L)
Q2514 2SC3399 SWITCH
SWD 5V
NORMAL AUDIO R/P
IC201 LA7294
TP202 (GND)
TP201 (HOT)
L2002 10μ
T2001
OSC Q2001 2SD734E F
VR201 100K BIAS
CN201
1 GND
2 R/P HEAD
3 R/P HEAD
4 AE FE HEAD
5 GND
TO MECHANISM
VOLTAGE : REC(PLAY) MODE
12
13
14
15
16
17
18
19
20
21
22
23

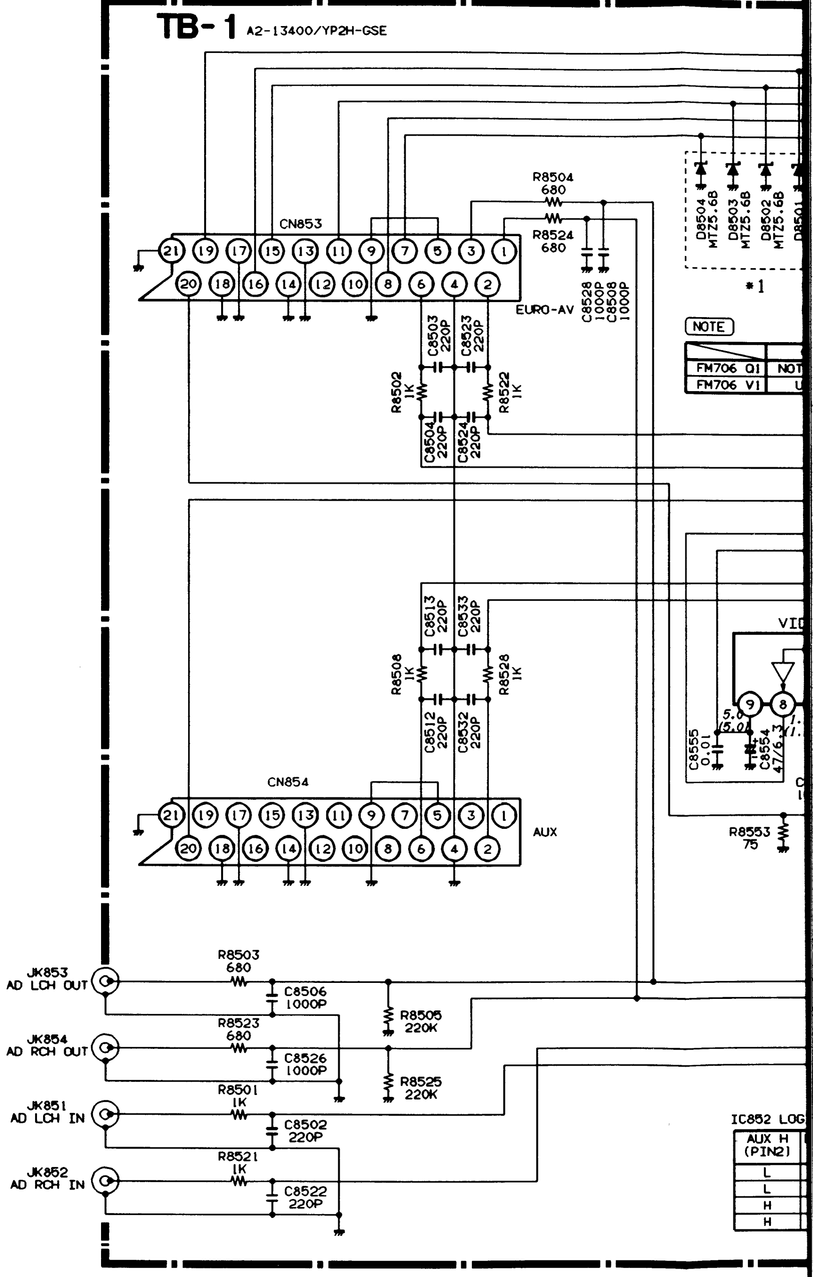
AD-2 AUDIO LEVEL METER


AD - 2
A4-13400/YP2H-GSE
CN271
GND
HIFI L
TRACK.SIG
PICTURE VR
HP OUT LCH
SWD 5V
GND
HP OUT RCH
HP CTL
L METER R
L METER L
SWD 5V(METER)
GND
TO CP-1(AD-A) CN251
HEADPHONE VOL.
VR271 10KB
C2712 0.01
C2711 0.01
L2701 100μ
L2702 100μ
JK272
HEADPHONE JACK
A2701 LEVEL METER
LCH AC
RCH AC
DC IN
MUTE
AC/DC
HOLD RESET
VCC
GND
R2711 1K
VR241 10KB
METER LCH ADJ
METER RCH ADJ
VR242 10KB
C2709 10/16
C2710 10/16
R2710 10K
R2709 10K
SHARP
SOFT
VR277 20KB
PICTURE VOLUME
S2703 EJECT
S2704 POWER /STOP
S2705 PLAY
RR271
CN272
ALWAYS 5V
GND
KEY IN 4
KEY IN 2
SEG.f
SEG.e
HIFI L
IR SIG.
SWD 5V
TO TM-1 CN712
VOLTAGE : REC (PB) MODE

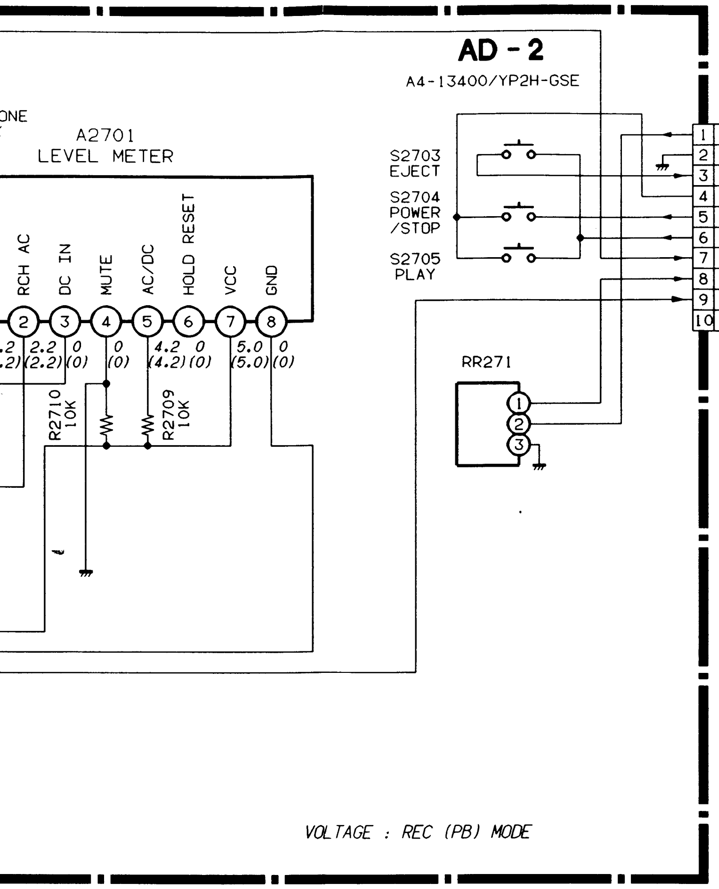
VP-1 (AP-A) AUDIO PRE-AMP


VP-1(AP-A)
A3-13105/YP2H-GSE
TP291
R2908 10
R2907 10
C2917 0.1
C2916 0.1/50
C2914 0.01
R2904 22K
C2912 0.01
R2903 22K
C2911 0.1/50
C2910 0.01
C2908 47/6.3
R2911 150
C2909 0.01
C2907 0.01
L2902 100μ
AF+(CH1)
AF COMMON
AF-(CH2)
TO VP-A (CN186)
SW PB
BIAS
36DB
HEAD SW
REC MUTE ON/OFF
1/2 VCC
REC GND
NC
SW.P
REC VCC
MUTE HI
PB GND
IC291 μPC2350GS AUDIO PRE-AMP
C2901 0.01
C2903 0.01
C2902 47/16
C2904 0.01
C2905 0.01
C2906 0.01
R2901 1K
L2901 100μ
CN291
AF SW PULSE
GND
AF PB
1.4M 1.8M AF REC
SWD 5V
TO CP-1(AD-A) CN253
REC 12V
GND
TO VP-A
VOLTAGE : REC(PLAY) MODE

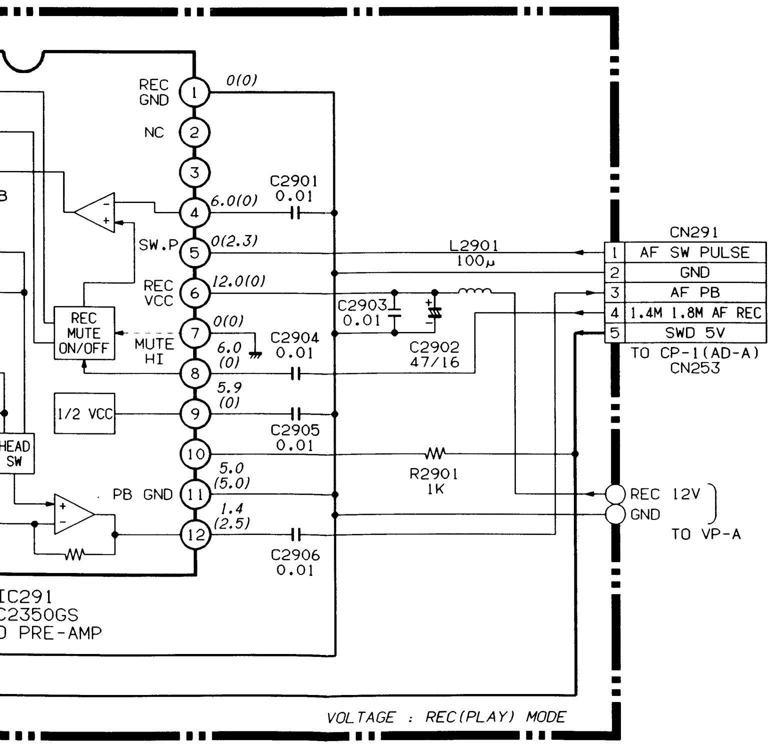
TB-1 TERMINAL & I


TB-1 A2-13400/YP2H-GSE
CN853
EURO-AV
R8504 680
R8524 680
C8528 1000P
C8508 1000P
D8504 MTZ5.6B
D8503 MTZ5.6B
D8502 MTZ5.6B
NOTE
FM706 Q1
FM706 V1
R8502 1K
R8522 1K
C8503 220P
C8523 220P
C8504 220P
C8524 220P
C8513 220P
C8533 220P
R8508 1K
R8528 1K
C8512 220P
C8532 220P
CN854
AUX
C8555 0.01
C8554 47/6.3
R8553 75
JK853 AD LCH OUT
JK854 AD RCH OUT
JK851 AD LCH IN
JK852 AD RCH IN
R8503 680
C8506 1000P
R8523 680
C8526 1000P
R8505 220K
R8525 220K
R8501 1K
C8502 220P
R8521 1K
C8522 220P
IC852 LOG
AUX H (PIN21)
L
L
H
H

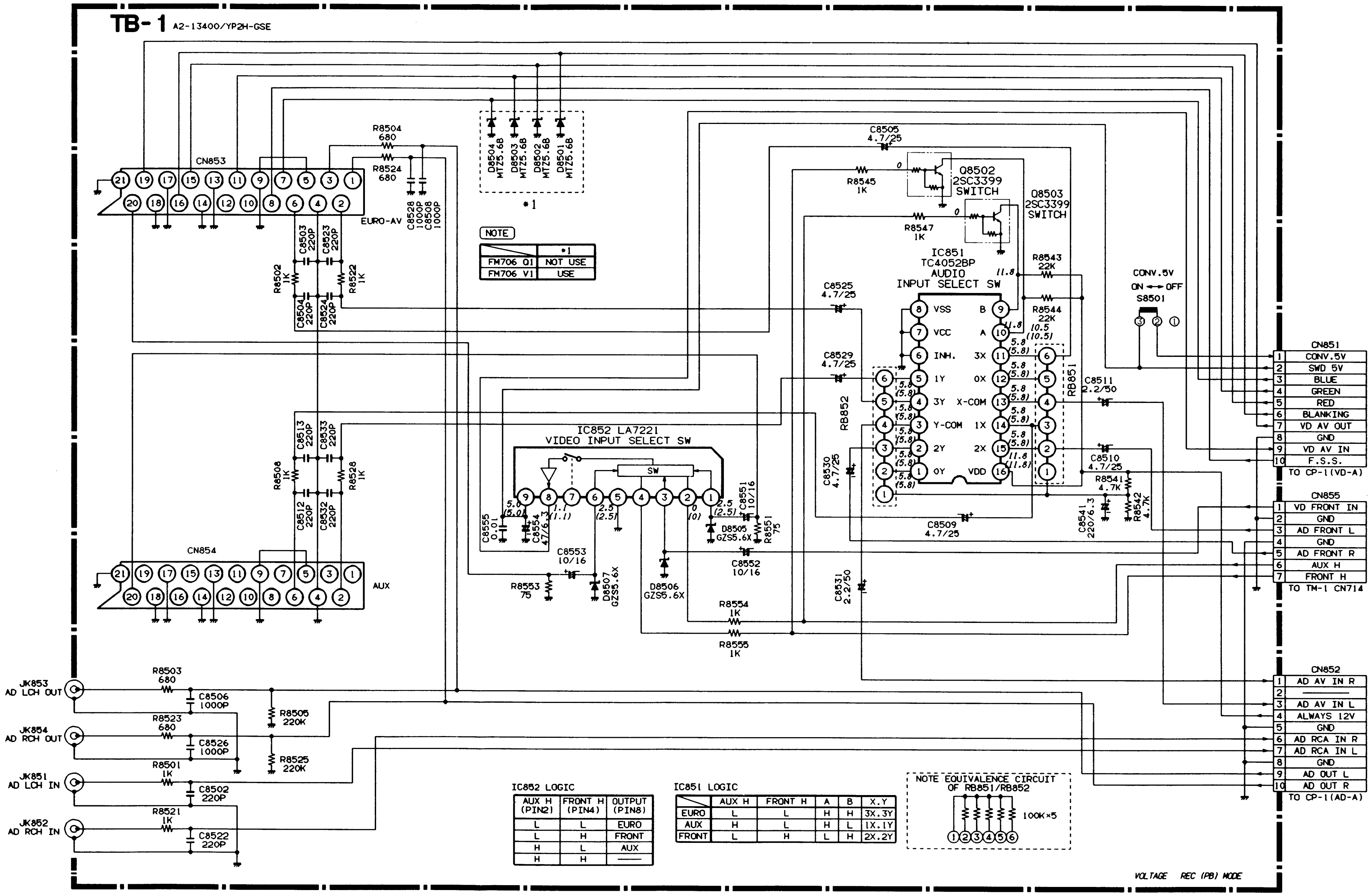
ER


AD - 2
A4-13400/YP2H-GSE
A2701
LEVEL METER
RCH AC
DC IN
MUTE
AC/DC
HOLD RESET
VCC
GND
R2710
10K
R2709
10K
S2703
EJECT
S2704
POWER
/STOP
S2705
PLAY
RR271
CN272
1 ALWAYS 5V
2 GND
3 KEY IN 4
4 KEY IN 2
5 SEG. f
6 SEG. e
7 HIFI L
8 IR SIG.
9 SWD 5V
10
TO TM-1 CN712
VOLTAGE : REC (PB) MODE

AMP


REC GND
NC
SW.P
REC VCC
REC MUTE ON/OFF
MUTE HI
1/2 VCC
HEAD SW
PB GND
6.0(0)
0(2.3)
12.0(0)
0(0)
6.0 (0)
5.9 (0)
5.0 (5.0)
1.4 (2.5)
C2901 0.01
C2903 0.01
C2902 47/16
C2904 0.01
C2905 0.01
C2906 0.01
L2901 100μ
R2901 1K
CN291
1 AF SW PULSE
2 GND
3 AF PB
4 1.4M 1.8M AF REC
5 SWD 5V
TO CP-1(AD-A) CN253
REC 12V
GND
TO VP-A
IC291
C2350GS
D PRE-AMP
VOLTAGE : REC(PLAY) MODE

TB-1 TERMINAL & INPUT SELECT


TB- 1 A2-13400/YP2H-GSE
CN853
EURO-AV
CN854
AUX
R8504 680
R8524 680
C8528 1000P
C8508 1000P
C8503 220P
C8523 220P
C8504 220P
C8524 220P
R8502 1K
R8522 1K
C8513 220P
C8533 220P
C8512 220P
C8532 220P
R8508 1K
R8528 1K
D8504 MTZ5.6B
D8503 MTZ5.6B
D8502 MTZ5.6B
D8501 MTZ5.6B
*1
C8505 4.7/25
Q8502 2SC3399 SWITCH
Q8503 2SC3399 SWITCH
R8545 1K
R8547 1K
R8543 22K
R8544 22K
IC851 TC4052BP AUDIO INPUT SELECT SW
VSS
VCC
INH.
1Y
3Y
Y-COM
2Y
0Y
B
A
3X
0X
X-COM
1X
2X
VDD
C8525 4.7/25
C8529 4.7/25
RB851
RB852
C8511 2.2/50
C8510 4.7/25
R8541 4.7K
R8542 4.7K
C8541 220/6.3
CONV.5V
ON ↔ OFF
S8501
IC852 LA7221 VIDEO INPUT SELECT SW
SW
C8555 0.01
C8554 47/6.3
C8553 10/16
C8551 10/16
D8505 GZS5.6X
R8551 75
C8552 10/16
D8507 GZS5.6X
D8506 GZS5.6X
R8553 75
C8530 4.7/25
C8531 2.2/50
C8509 4.7/25
R8554 1K
R8555 1K
JK853 AD LCH OUT
JK854 AD RCH OUT
JK851 AD LCH IN
JK852 AD RCH IN
R8503 680
C8506 1000P
R8523 680
C8526 1000P
R8505 220K
R8525 220K
R8501 1K
C8502 220P
R8521 1K
C8522 220P
CN851
1 CONV.5V
2 SWD 5V
3 BLUE
4 GREEN
5 RED
6 BLANKING
7 VD AV OUT
8 GND
9 VD AV IN
10 F.S.S.
TO CP-1(VD-A)
CN855
1 VD FRONT IN
2 GND
3 AD FRONT L
4 GND
5 AD FRONT R
6 AUX H
7 FRONT H
TO TM-1 CN714
CN852
1 AD AV IN R
2
3 AD AV IN L
4 ALWAYS 12V
5 GND
6 AD RCA IN R
7 AD RCA IN L
8 GND
9 AD OUT L
10 AD OUT R
TO CP-1(AD-A)
NOTE EQUIVALENCE CIRCUIT OF RB851/RB852
100K×5
①②③④⑤⑥
VOLTAGE REC (PB) MODE

NOTE

	*1
FM706 Q1	NOT USE
FM706 V1	USE

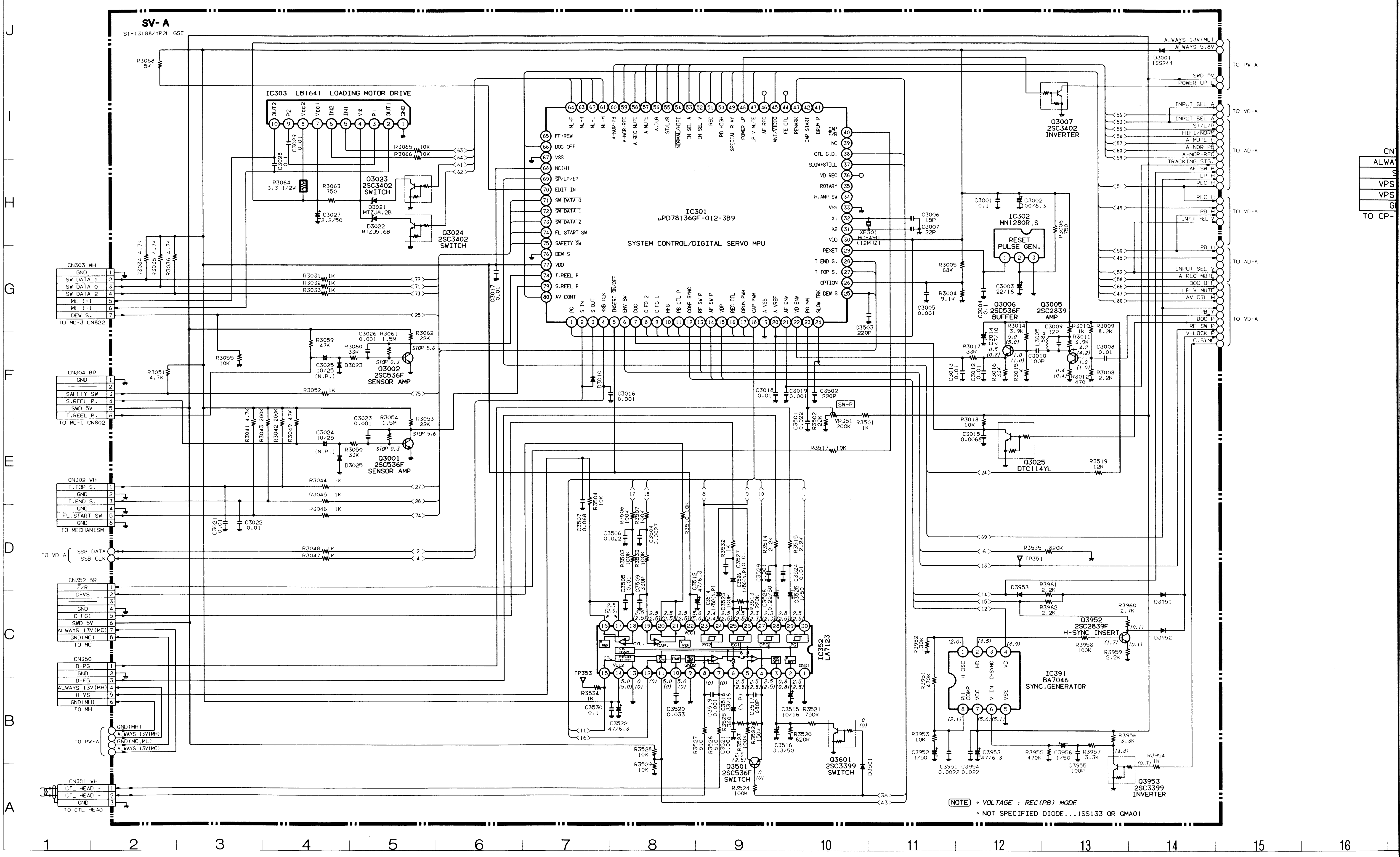
IC852 LOGIC

AUX H (PIN2)	FRONT H (PIN4)	OUTPUT (PIN8)
L	L	EURO
L	H	FRONT
H	L	AUX
H	H	———

IC851 LOGIC

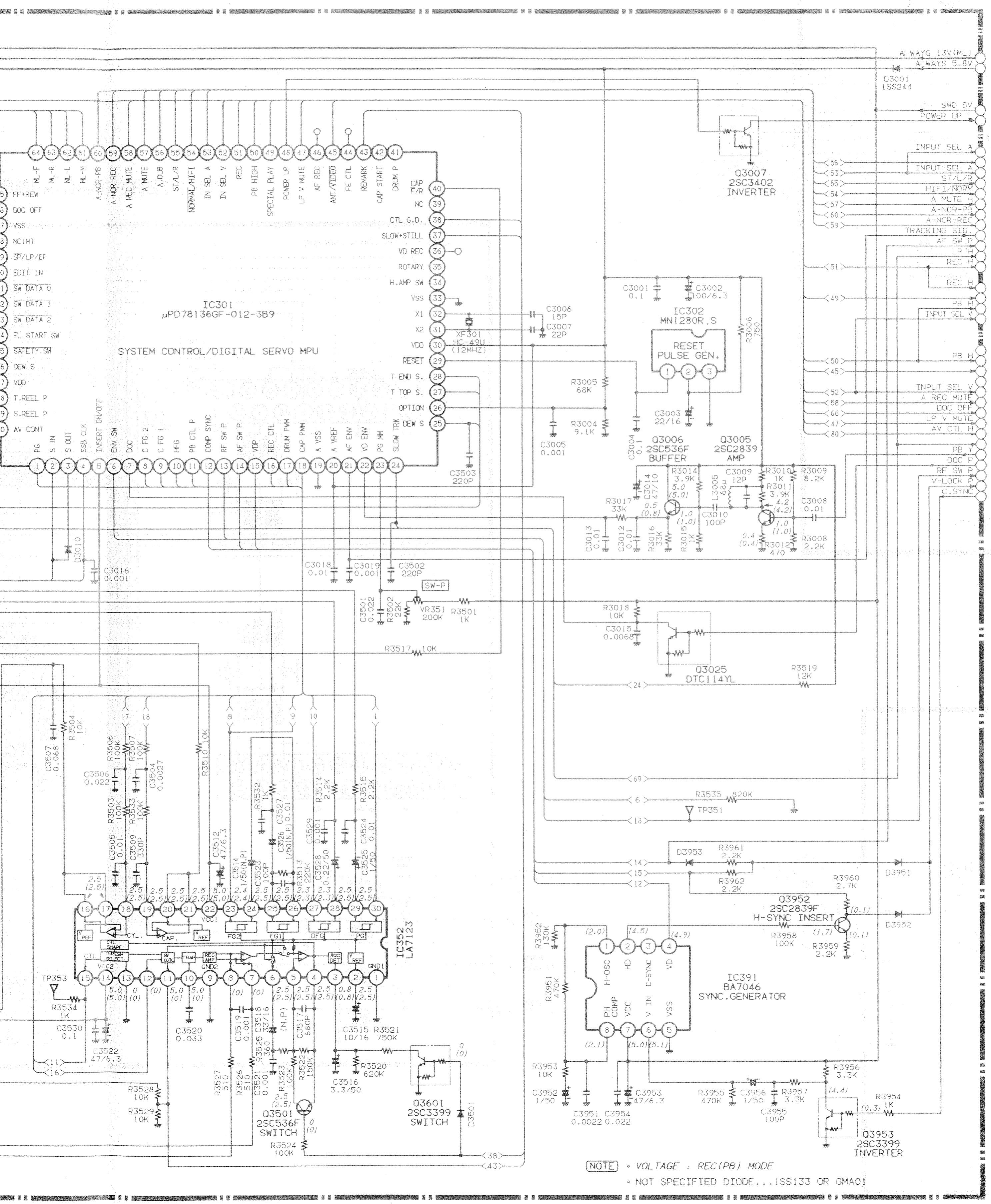
	AUX H	FRONT H	A	B	X.Y
EURO	L	L	H	H	3X.3Y
AUX	H	L	H	L	1X.1Y
FRONT	L	H	L	H	2X.2Y

CP-1 (SV-A) SYSTEM CONTROL & SERVO


SV-A
S1-13188/YP2H-GSE
IC303 LB1641 LOADING MOTOR DRIVE
IC301 µPD78136GF-012-3B9
SYSTEM CONTROL/DIGITAL SERVO MPU
IC302 MN1280R.S
RESET PULSE GEN.
IC352 LA7123
IC391 BA7046 SYNC.GENERATOR
Q3001 2SC536F SENSOR AMP
Q3002 2SC536F SENSOR AMP
Q3023 2SC3402 SWITCH
Q3024 2SC3402 SWITCH
Q3006 2SC536F BUFFER
Q3005 2SC2839 AMP
Q3007 2SC3402 INVERTER
Q3025 DTC114YL
Q3501 2SC536F SWITCH
Q3601 2SC3399 SWITCH
Q3952 2SC2839F H-SYNC INSERT
Q3953 2SC3399 INVERTER
XF301 HC-49U (12MHZ)
VR351 200K
CN303 WH: GND, SW DATA 1, SW DATA 0, SW DATA 2, ML (+), ML (-), DEW S. TO MC-3 CN822
CN304 BR: GND, SAFETY SW, S.REEL P., SWD 5V, T.REEL P. TO MC-1 CN802
CN302 WH: T.TOP S., GND, T.END S., GND, FL.START SW, GND TO MECHANISM
TO VD-A SSB DATA, SSB CLK
CN352 BR: F/R, C-VS, GND, C-FG1, SWD 5V, ALWAYS 13V(MC), GND(MC) TO MC
CN350: D-PG, GND, D-FG, ALWAYS 13V(MH), H-VS, GND(MH) TO MH
TO PW-A: GND(MH), ALWAYS 13V(MH), GND(MC,ML), ALWAYS 13V(MC)
CN351 WH: CTL HEAD +, CTL HEAD -, GND TO CTL HEAD
ALWAYS 13V(ML), ALWAYS 5.8V, SWD 5V, POWER UP L TO PW-A
INPUT SEL A, INPUT SEL A TO VD-A
ST/L/R, HIFI/NORM, A MUTE H, A-NOR-PB, A-NOR-REC, TRACKING SIG., AF SW P, LP H, REC H TO AD-A
REC H, PB H, INPUT SEL V TO VD-A
PB H TO AD-A
INPUT SEL V, A REC MUTE, DOC OFF, LP V MUTE, AV CTL H
PB Y, DOC P, RF SW P, V-LOCK P, C.SYNC TO VD-A
D3001 1SS244
CN ALWA VPS VPS GI TO CP-

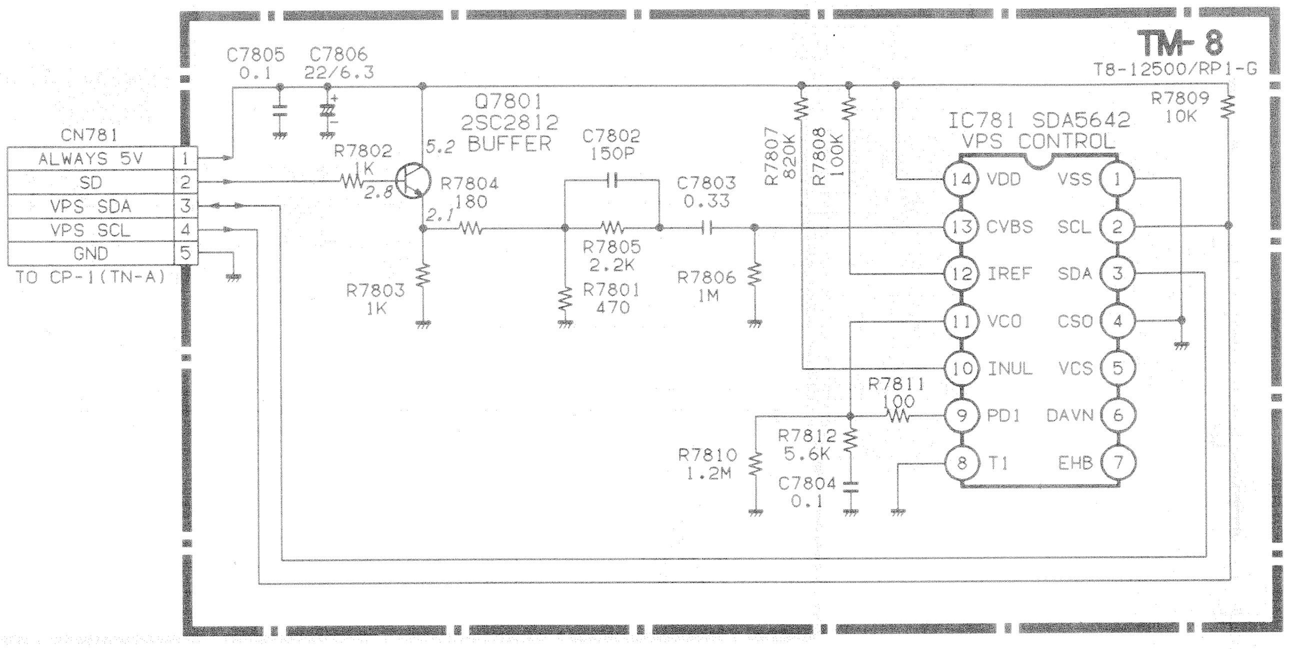
NOTE • VOLTAGE : REC(PB) MODE
• NOT SPECIFIED DIODE...1SS133 OR GMA01

TEM CONTROL & SERVO

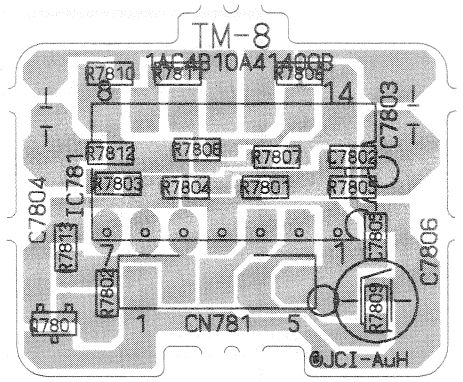

ALWAYS 13V(ML)
ALWAYS 5.8V
D3001 1SS244
TO PW-A
SWD 5V
POWER UP L
TO VD-A
TO AD-A
Q3007 2SC3402 INVERTER
INPUT SEL A
ST/L/R
HIFI/NORM
A MUTE H
A-NOR-PB
A-NOR-REC
TRACKING SIG
AF SW P
LP H
REC H
PB H
INPUT SEL V
A REC MUTE
DOC OFF
LP V MUTE
AV CTL H
PB Y
DOC P
RF SW P
V-LOCK P
C.SYNC
IC301 μPD78136GF-012-3B9
SYSTEM CONTROL/DIGITAL SERVO MPU
XF301 HC-49U (12MHZ)
IC302 MN1280R,S
RESET PULSE GEN.
Q3006 2SC536F BUFFER
Q3005 2SC2839 AMP
Q3025 DTC114YL
VR351 200K
SW-P
TP351
IC352 LA7123
Q3501 2SC536F SWITCH
Q3601 2SC3399 SWITCH
D3501
D3953
Q3952 2SC2839F H-SYNC INSERT
IC391 BA7046 SYNC.GENERATOR
H-OSC
HD
C-SYNC
VD
PH COMP
VCC
V IN
VSS
Q3953 2SC3399 INVERTER
D3951
D3952
TP353

NOTE • VOLTAGE : REC(PB) MODE
• NOT SPECIFIED DIODE...1SS133 OR GMA01

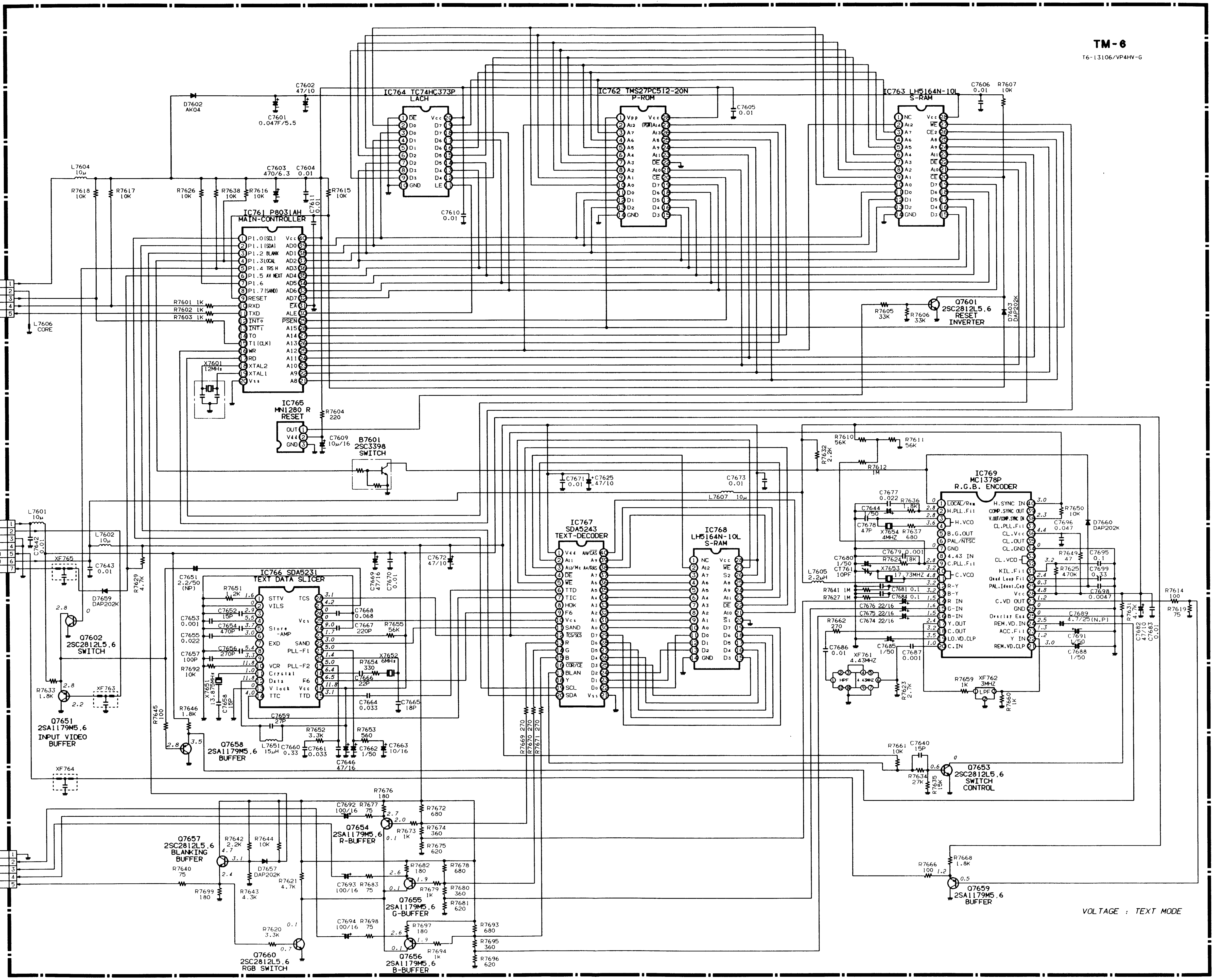
TM-8 VPS


TM-8
T8-12500/RP1-G
CN781
ALWAYS 5V 1
SD 2
VPS SDA 3
VPS SCL 4
GND 5
TO CP-1(TN-A)
C7805 0.1
C7806 22/6.3
Q7801 2SC2812 BUFFER
R7802 1K
R7804 180
R7803 1K
C7802 150P
C7803 0.33
R7805 2.2K
R7801 470
R7806 1M
R7807 820K
R7808 100K
R7809 10K
IC781 SDA5642 VPS CONTROL
VDD 14
VSS 1
CVBS 13
SCL 2
IREF 12
SDA 3
VCO 11
CSO 4
INUL 10
VCS 5
PD1 9
DAVN 6
T1 8
EHB 7
R7811 100
R7812 5.6K
R7810 1.2M
C7804 0.1

TM-8 P.C.B.


TM-8
1AC4B10A41400B
R7810
R7811
R7806
R7812
R7808
R7807
C7802
C7803
R7803
R7804
R7801
R7805
C7804
IC781
R7813
R7802
R7809
C7806
C7801
CN781
1
5
8
14
@JCI-AuH

TM-6 VIDEO TEXT DECODER (VPT) (FM706V1)



TM-6
T6-13106/VP4HV-G
IC764 TC74HC373P LACH
IC762 TMS27PC512-20N P-ROM
IC763 LH5164N-10L S-RAM
IC761 P8031AH MAIN-CONTROLLER
IC765 MN1280 R RESET
B7601 2SC3398 SWITCH
Q7601 2SC2812L5,6 RESET INVERTER
D7602 AK04
D7603 DAP202K
X7601 12MHz
CN761 YL
ALWAYS 5V
GND
TEXT CLK
TEXT RXD
TEXT TXD
TO CP-2
L7606 CORE
CN762 RE
SWD 12V
VD(TU)
GND
GND
VD(TU)(VPT)
SWD 5V(VPT)
TEXT H
TO CP-2
IC766 SDA5231 TEXT DATA SLICER
IC767 SDA5243 TEXT-DECODER
IC768 LH5164N-10L S-RAM
IC769 MC1378P R.G.B. ENCODER
Q7602 2SC2812L5,6 SWITCH
Q7651 2SA1179M5,6 INPUT VIDEO BUFFER
Q7658 2SA1179M5,6 BUFFER
Q7653 2SC2812L5,6 SWITCH CONTROL
Q7659 2SA1179M5,6 BUFFER
Q7654 2SA1179M5,6 R-BUFFER
Q7655 2SA1179M5,6 G-BUFFER
Q7656 2SA1179M5,6 B-BUFFER
Q7657 2SC2812L5,6 BLANKING BUFFER
Q7660 2SC2812L5,6 RGB SWITCH
D7657 DAP202K
D7659 DAP202K
D7660 DAP202K
XF761 4.43MHz
XF762 3MHZ
XF763
XF764
XF765
X7653 17.73MHZ
X7654 4MHZ
CN763
GND
BLUE
GREEN
RED
BLANKING
TO CP-2

VOLTAGE : TEXT MODE

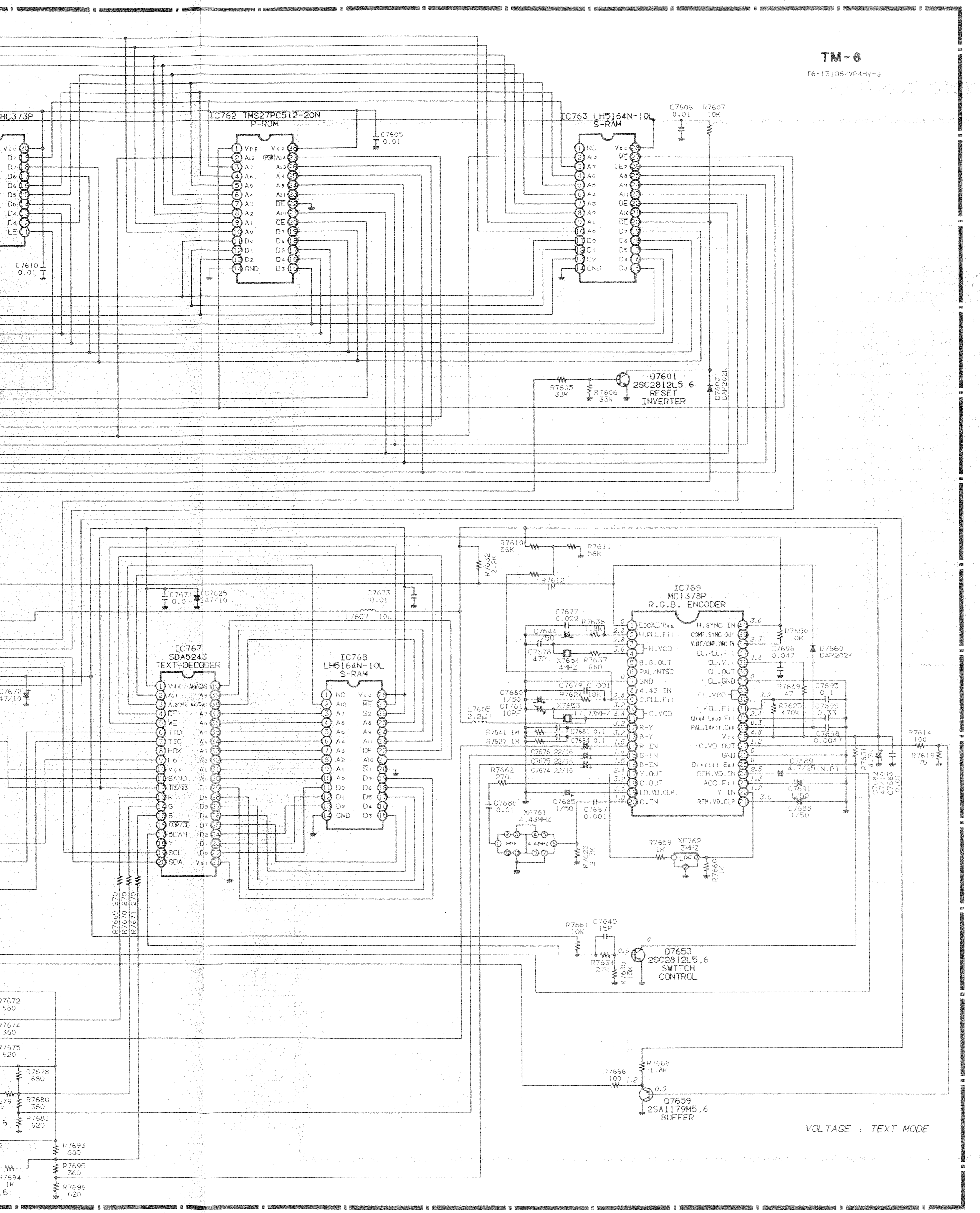
NOTE:

K
J
I
H
G
F
E
D
C
B
A

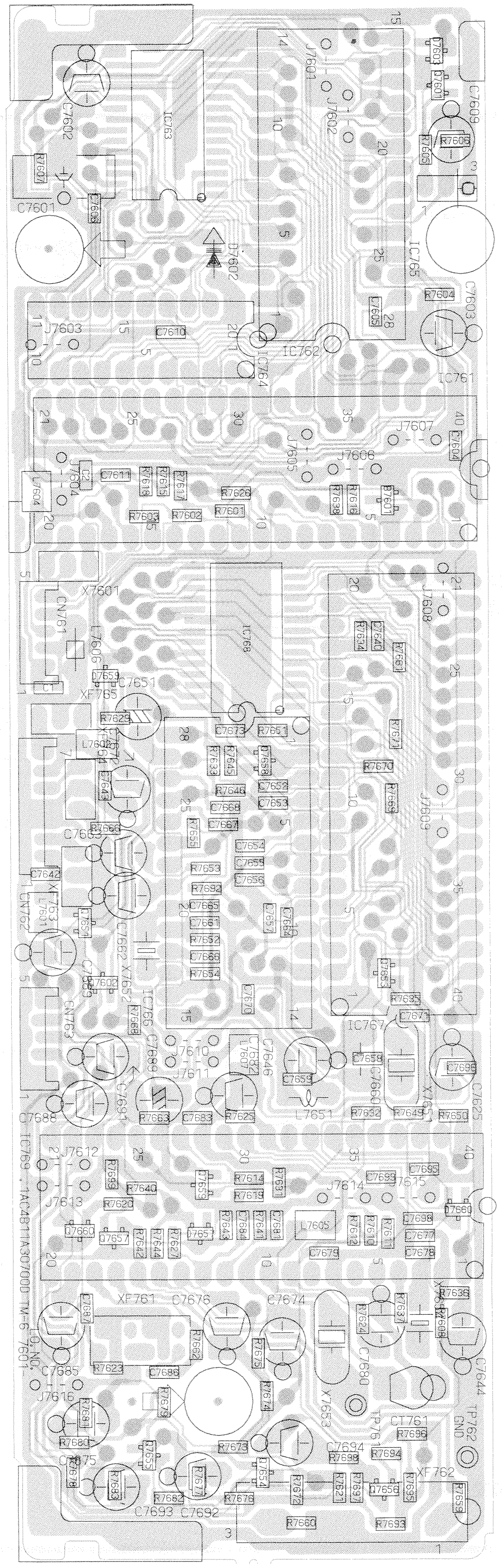
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Schaltpläne u. Platinen FM706Q1/FM706V1

(VPT) (FM706V1)

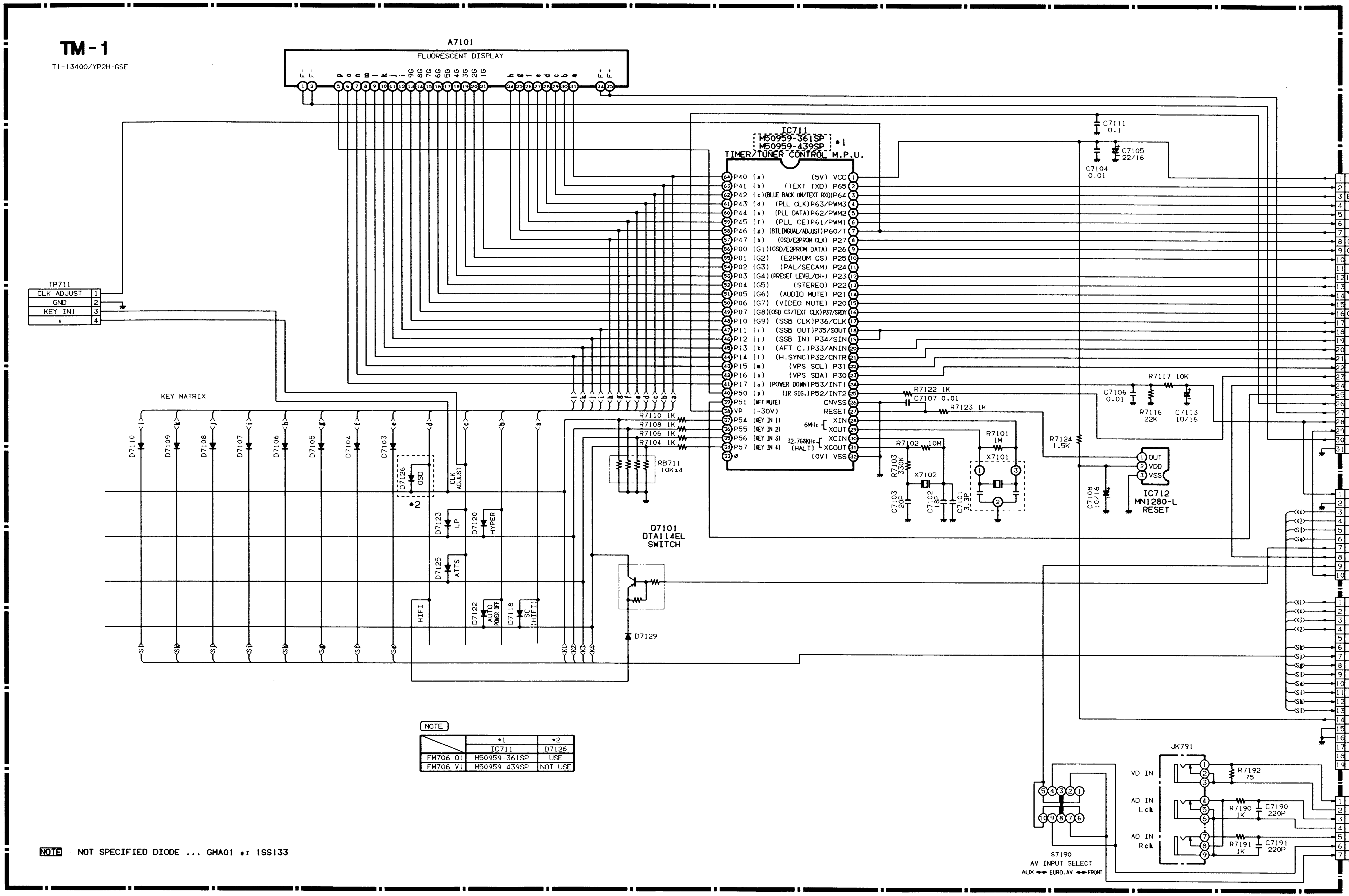

TM-6
T6-13106/VP4HV-G
HC373P
IC762 TMS27PC512-20N
P-ROM
IC763 LH5164N-10L
S-RAM
C7605 0.01
C7606 0.01
R7607 10K
C7610 0.01
Q7601
2SC2812L5.6
RESET
INVERTER
R7605 33K
R7606 33K
D7603 DAP202K
IC767
SDA5243
TEXT-DECODER
IC768
LH5164N-10L
S-RAM
IC769
MC1378P
R.G.B. ENCODER
C7671 0.01
C7625 47/10
C7673 0.01
L7607 10μ
R7610 56K
R7611 56K
R7612 1M
R7632 2.2K
C7677 0.022
D7660 DAP202K
R7650 10K
C7696 0.047
L7605 2.2μH
X7654 4MHZ
X7653 17.73MHZ
XF761 4.43MHZ
XF762 3MHZ
R7614 100
R7619 75
R7669 270
R7670 270
R7671 270
Q7653
2SC2812L5.6
SWITCH
CONTROL
R7661 10K
C7640 15P
R7634 27K
R7635 15K
Q7659
2SA1179M5.6
BUFFER
R7668 1.8K
R7666 100
R7672 680
R7674 360
R7675 620
R7678 680
R7680 360
R7681 620
R7693 680
R7695 360
R7696 620
R7694 1K
VOLTAGE : TEXT MODE
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

TM-6 P.C.B. (FM706V1)


IC762
IC763
IC764
IC765
IC761
IC768
IC767
J7601
J7602
J7603
J7607
J7608
J7609
X7601
XF761
XF762
X7653
TP762 GND
C7601
C7609
C7644

NOTE: ▨ BOTTOM SIDE FOIL ▨ TOP SIDE FOIL

TM-1 BEDIENTEIL; TIMER & TUNING CONTROL

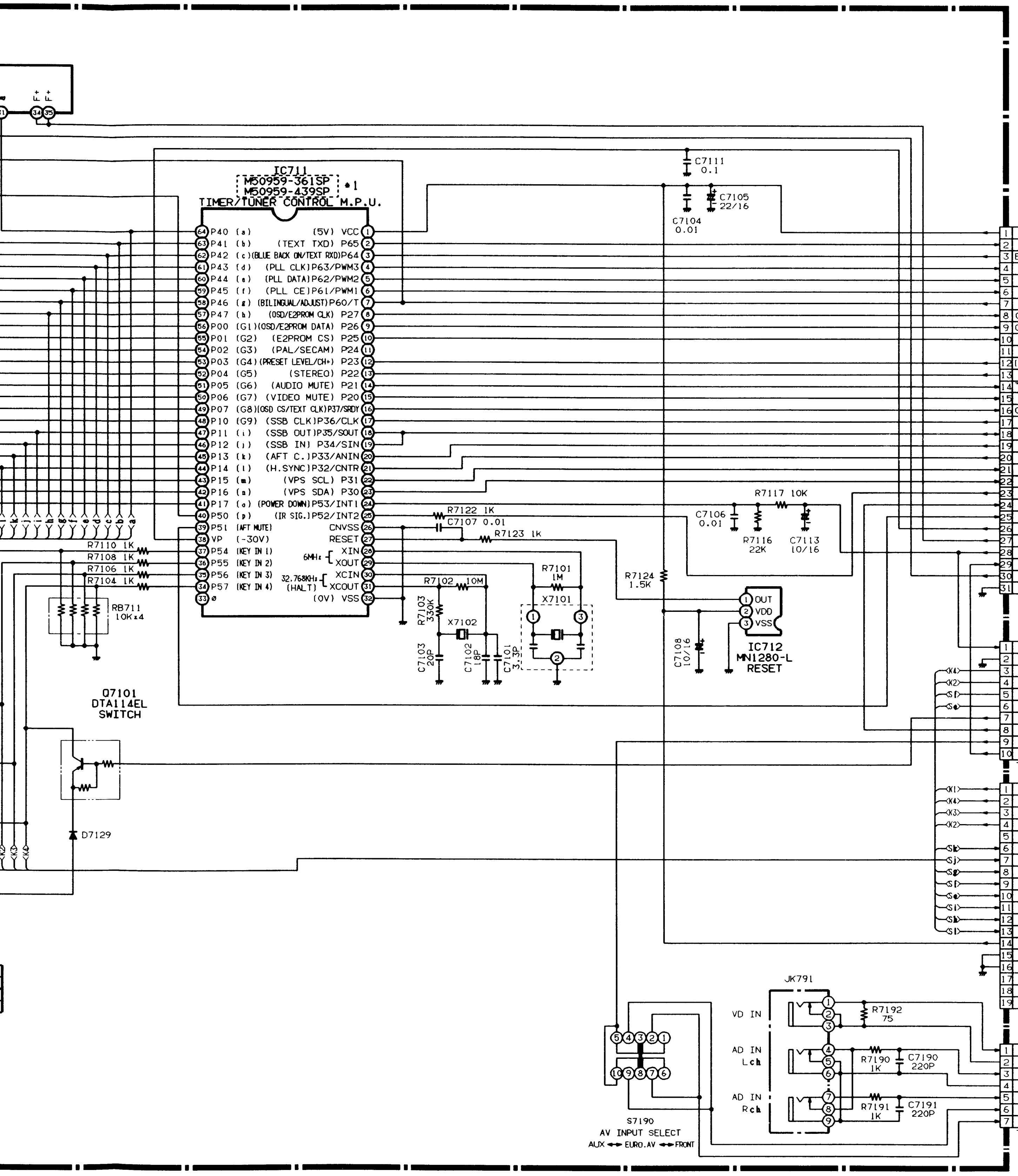

TM-1
T1-13400/YP2H-GSE
A7101
FLUORESCENT DISPLAY
F- F- p o n m l k j i 9G 8G 7G 6G 5G 4G 3G 2G 1G h g f e d c b a F+ F+
TP711
CLK ADJUST 1
GND 2
KEY IN1 3
c 4
IC711
M50959-361SP
M50959-439SP
*1
TIMER/TUNER CONTROL M.P.U.
64 P40 (a)
63 P41 (b)
62 P42 (c)
61 P43 (d)
60 P44 (e)
59 P45 (f)
58 P46 (g)
57 P47 (h)
56 P00 (G1)
55 P01 (G2)
54 P02 (G3)
53 P03 (G4)
52 P04 (G5)
51 P05 (G6)
50 P06 (G7)
49 P07 (G8)
48 P10 (G9)
47 P11 (i)
46 P12 (j)
45 P13 (k)
44 P14 (l)
43 P15 (m)
42 P16 (n)
41 P17 (o)
40 P50 (p)
39 P51 (AFT MUTE)
38 VP (-30V)
37 P54 (KEY IN 1)
36 P55 (KEY IN 2)
35 P56 (KEY IN 3)
34 P57 (KEY IN 4)
33 ø
(5V) VCC 1
(TEXT TXD) P65 2
(BLUE BACK ON/TEXT RXD)P64 3
(PLL CLK)P63/PWM3 4
(PLL DATA)P62/PWM2 5
(PLL CE)P61/PWM1 6
(BILINGUAL/ADJUST)P60/T 7
(OSD/E2PROM CLK) P27 8
(OSD/E2PROM DATA) P26 9
(E2PROM CS) P25 10
(PAL/SECAM) P24 11
(PRESET LEVEL/CH+) P23 12
(STEREO) P22 13
(AUDIO MUTE) P21 14
(VIDEO MUTE) P20 15
(OSD CS/TEXT CLK)P37/SRDY 16
(SSB CLK)P36/CLK 17
(SSB OUT)P35/SOUT 18
(SSB IN) P34/SIN 19
(AFT C.)P33/ANIN 20
(H.SYNC)P32/CNTR 21
(VPS SCL) P31 22
(VPS SDA) P30 23
(POWER DOWN)P53/INT1 24
(IR SIG.)P52/INT2 25
CNVSS 26
RESET 27
6MHz XIN 28
XOUT 29
32.768KHz (HALT) XCIN 30
XCOUT 31
(0V) VSS 32
C7111 0.1
C7104 0.01
C7105 22/16
R7122 1K
C7107 0.01
R7123 1K
R7102 10M
R7103 330K
X7102
C7103 20P
C7102 18P
C7101 3.3P
R7101 1M
X7101
R7124 1.5K
C7106 0.01
R7116 22K
R7117 10K
C7113 10/16
C7108 10/16
IC712
MN1280-L
RESET
OUT VDD VSS
R7110 1K
R7108 1K
R7106 1K
R7104 1K
RB711 10K×4
KEY MATRIX
D7110 D7109 D7108 D7107 D7106 D7105 D7104 D7103
D7126 OSD
*2
CLK ADJUST
D7123 LP
D7120 HYPER
D7125 ATTS
HIFI
D7122 AUTO POWER OFF
D7118 SC (HIFI)
Q7101
DTA114EL
SWITCH
D7129
K1 K2 K3 K4
CN711
1 BACK UP 5V
2 ——/TEXT TXD
3 B.B.ON/TEXT RXD
4 PLL CLK
5 PLL DATA
6 PLL CE
7 BIL-L
8 OSD/E2PROM CLK
9 OSD/E2PROM DATA
10 E2PROM CS
11 ——
12 (PRESET LEVEL)/CH+
13 STEREO
14 TU AUDIO MUTE
15 VIDEO MUTE
16 OSD CS/TEXT CLK
17 SSB CLK
18 SSB DATA
19 AFT C.
20 SYNC L
21 VPS SCL
22 VPS SDA
23 REM SIG.
24 IR SIG.
25 ——
26 ALWAYS -23V
27 HEATER +
28 ALWAYS 5V
29 ——
30 HEATER -
31 GND
TO CP-2 CN701
CN712
1 ALWAYS 5V
2 GND
3 KEY IN4
4 KEY IN2
5 SEG.f
6 SEG.e
7 HIFI L
8 IR SIG.
9 SWD 5V
10 ——
TO AD-2 CN272
CN713
1 KEY IN1
2 KEY IN4
3 KEY IN3
4 KEY IN2
5 ——
6 SEG.k
7 SEG.j
8 SEG.g
9 SEG.f
10 SEG.e
11 SEG.i
12 SEG.h
13 SEG.l
14 ALL CLEAR
15 GND
16 GND
17 ——
18 ——
19 ——
TO SW PANEL
CN714
1 VD FRONT IN
2 GND
3 AD FRONT L
4 GND
5 AD FRONT R
6 AUX H
7 FRONT H
TO TB-1 CN855
JK791
VD IN
AD IN Lch
AD IN Rch
R7192 75
R7190 1K
C7190 220P
R7191 1K
C7191 220P
S7190
AV INPUT SELECT
AUX ◂▸ EURO.AV ◂▸ FRONT

NOTE

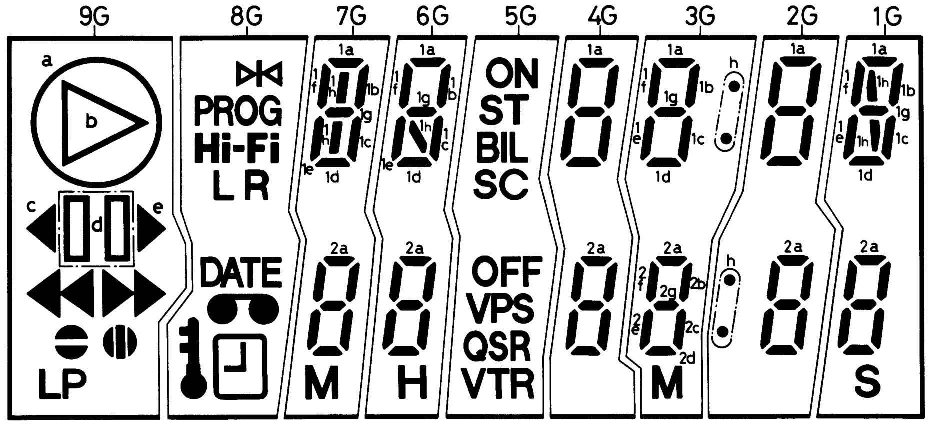
	*1	*2
	IC711	D7126
FM706 01	M50959-361SP	USE
FM706 V1	M50959-439SP	NOT USE

NOTE : NOT SPECIFIED DIODE ... GMA01 or 1SS133

DIENTEIL; TIMER & TUNING CONTROL


IC711
M50959-361SP
M50959-439SP
TIMER/TUNER CONTROL M.P.U.
C7111 0.1
C7105 22/16
C7104 0.01
CN711
BACK UP 5V
TEXT TXD
B.B.ON/TEXT RXD
PLL CLK
PLL DATA
PLL CE
BIL-L
OSD/E2PROM CLK
OSD/E2PROM DATA
E2PROM CS
(PRESET LEVEL)/CH+
STEREO
TU AUDIO MUTE
VIDEO MUTE
OSD CS/TEXT CLK
SSB CLK
SSB DATA
AFT C.
SYNC L
VPS SCL
VPS SDA
REM SIG.
IR SIG.
ALWAYS -23V
HEATER +
ALWAYS 5V
HEATER -
GND
TO CP-2 CN701
R7122 1K
C7107 0.01
R7123 1K
R7117 10K
C7106 0.01
R7116 22K
C7113 10/16
R7124 1.5K
R7110 1K
R7108 1K
R7106 1K
R7104 1K
RB711 10K×4
R7102 10M
R7101 1M
X7101
X7102
R7103 330K
C7103 20P
C7102 18P
C7101 3.3P
C7108 10/16
IC712
MN1280-L
RESET
OUT
VDD
VSS
Q7101
DTA114EL
SWITCH
D7129
CN712
ALWAYS 5V
GND
KEY IN4
KEY IN2
HIFI L
IR SIG.
SWD 5V
TO AD-2 CN272
CN713
KEY IN1
KEY IN4
KEY IN3
KEY IN2
ALL CLEAR
TO SW PANEL
JK791
VD IN
AD IN Lch
AD IN Rch
R7192 75
R7190 1K
C7190 220P
R7191 1K
C7191 220P
CN714
VD FRONT IN
AD FRONT L
AD FRONT R
AUX H
FRONT H
TO TB-1 CN855
S7190
AV INPUT SELECT
AUX EURO.AV FRONT

A7001 DISPLAY GRID/ANODE ASSIGNMENT


9G
8G
7G
6G
5G
4G
3G
2G
1G
PROG
Hi-Fi
L R
ON
ST
BIL
SC
DATE
OFF
VPS
QSR
VTR
LP
M
H
M
S

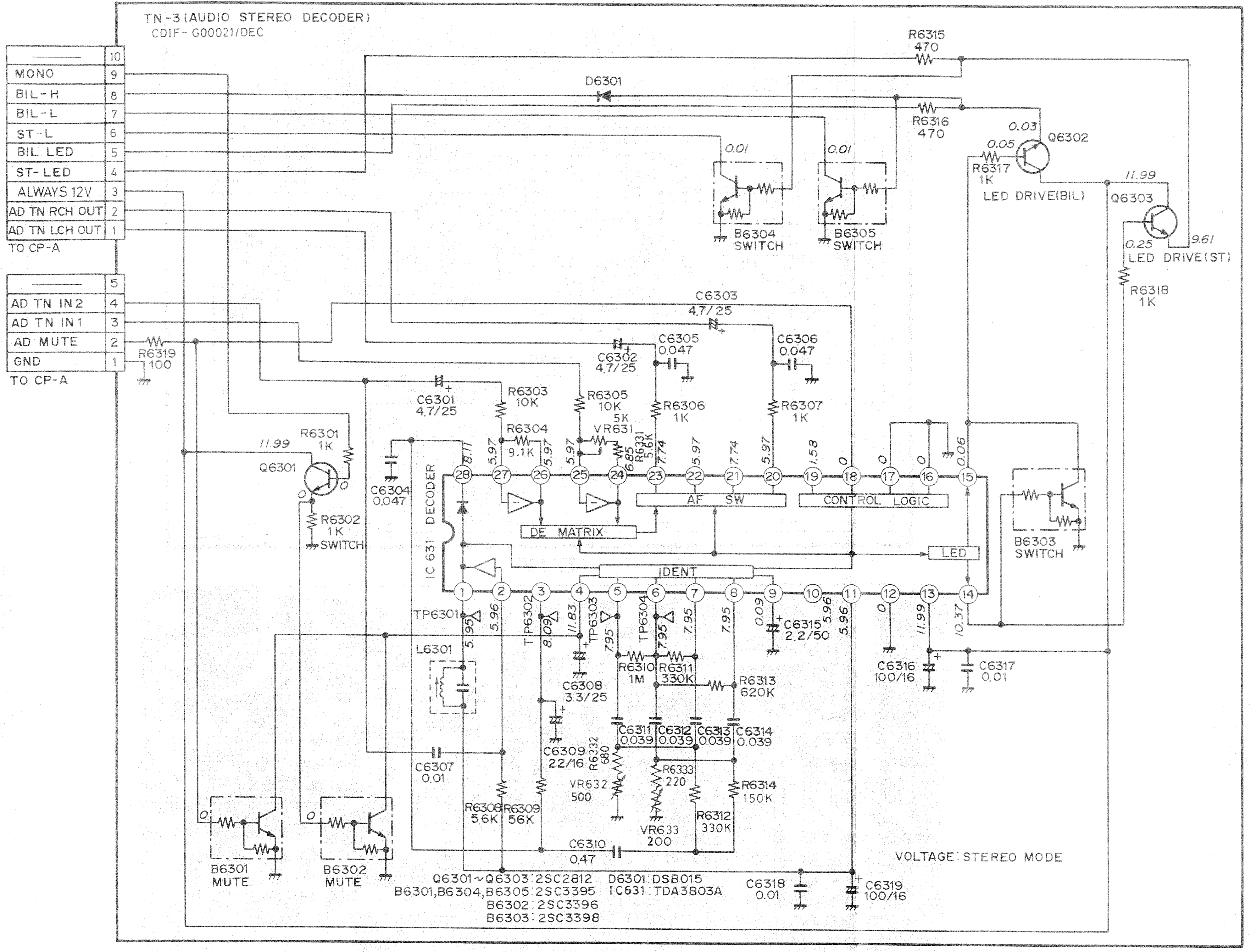
A7001 DISPLAY TABLE OF GRID/ANODE CONNECTION

	9G	8G	7G	6G	5G	4G	3G	2G	1G
a	○	¤	1a	1a	**ON**	1a	1a	1a	1a
b	▷	⋈	1b	1b	**ST**	1b	1b	1b	1b
c	◀	**PROG**	1c	1c	**BIL**	1c	1c	1c	1c
d	▯▯	**Hi-Fi**	1d	1d	**SC**	1d	1d	1d	1d
e	▶	**L**	1e	1e	–	1e	1e	1e	1e
f	–	**R**	1f	1f	–	1f	1f	1f	1f
g	–	–	1g	1g	–	1g	1g	1g	1g
h	–	–	1h	1h	–	–	⁚(UPPER)	⁚(LOWER)	1h
i	◀◀	**DATE**	2a	2a	**OFF**	2a	2a	2a	2a
j	▶▶	∞	2b	2b	**VPS**	2b	2b	2b	2b
k	⊖	🌡	2c	2c	**QSR**	2c	2c	2c	2c
l	◍	⏲	2d	2d	**VTR**	2d	2d	2d	2d
m	**LP**	–	2e	2e	–	2e	2e	2e	2e
n	**EP**	–	2f	2f	–	2f	2f	2f	2f
o	–	–	2g	2g	–	2g	2g	2g	2g
p	–	–	**M**	**H**	–	**H**	**M**	**M**	**S**

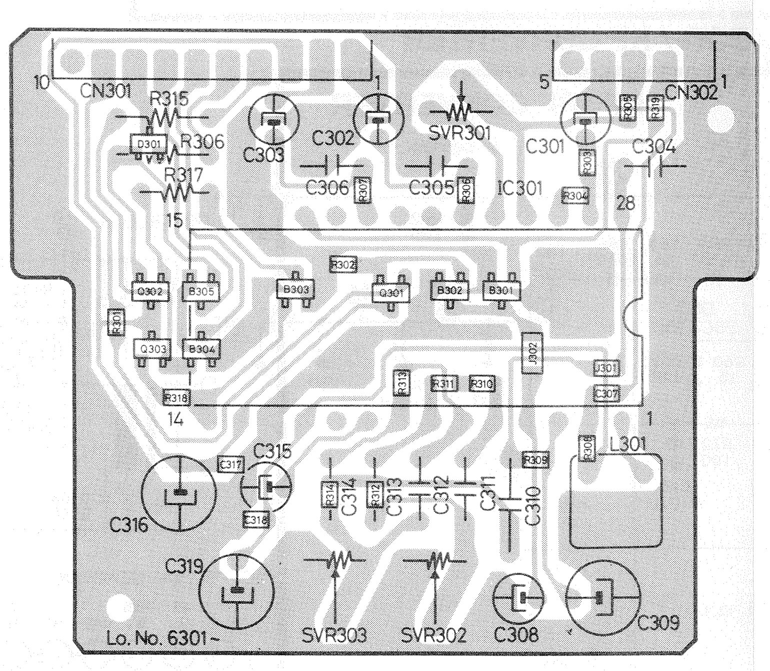
9G/QP

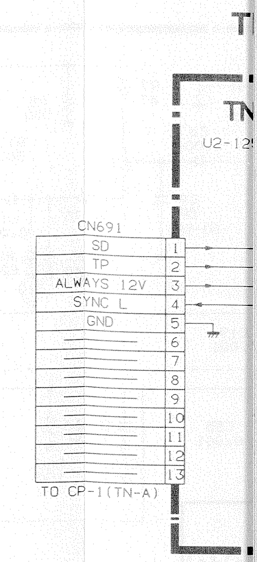
K
J
I
H
G
F
E
D
C
B
A

TN-3 AUDIO STEREO DECODER


TN-3 (AUDIO STEREO DECODER)
CD1F-G00021/DEC
MONO
BIL-H
BIL-L
ST-L
BIL LED
ST-LED
ALWAYS 12V
AD TN RCH OUT
AD TN LCH OUT
TO CP-A
AD TN IN2
AD TN IN1
AD MUTE
GND
TO CP-A
R6319 100
D6301
R6315 470
R6316 470
B6304 SWITCH
B6305 SWITCH
0.01
0.03
0.05
Q6302
R6317 1K
LED DRIVE(BIL)
11.99
Q6303
0.25
9.61
LED DRIVE(ST)
R6318 1K
C6303 4.7/25
C6305 0.047
C6306 0.047
C6302 4.7/25
C6301 4.7/25
R6303 10K
R6305 10K
R6306 1K
R6307 1K
R6304 9.1K
5K VR631
R6331 5.6K
R6301 1K
Q6301
R6302 1K
SWITCH
C6304 0.047
IC631 DECODER
AF SW
CONTROL LOGIC
DE MATRIX
LED
IDENT
B6303 SWITCH
TP6301
TP6302
TP6303
TP6304
L6301
C6315 2.2/50
C6316 100/16
C6317 0.01
C6308 3.3/25
R6310 1M
R6311 330K
R6313 620K
C6311 0.039
C6312 0.039
C6313 0.039
C6314 0.039
C6309 22/16
R6332 680
VR632 500
R6333 220
VR633 200
R6312 330K
R6314 150K
C6307 0.01
R6308 5.6K
R6309 56K
C6310 0.47
B6301 MUTE
B6302 MUTE
C6318 0.01
C6319 100/16
Q6301~Q6303:2SC2812
B6301,B6304,B6305:2SC3395
B6302:2SC3396
B6303:2SC3398
D6301:DSB015
IC631:TDA3803A
VOLTAGE: STEREO MODE
8.11
5.97
6.85
7.74
1.58
10.37
5.95
5.96
8.09
11.83
7.95
0.09

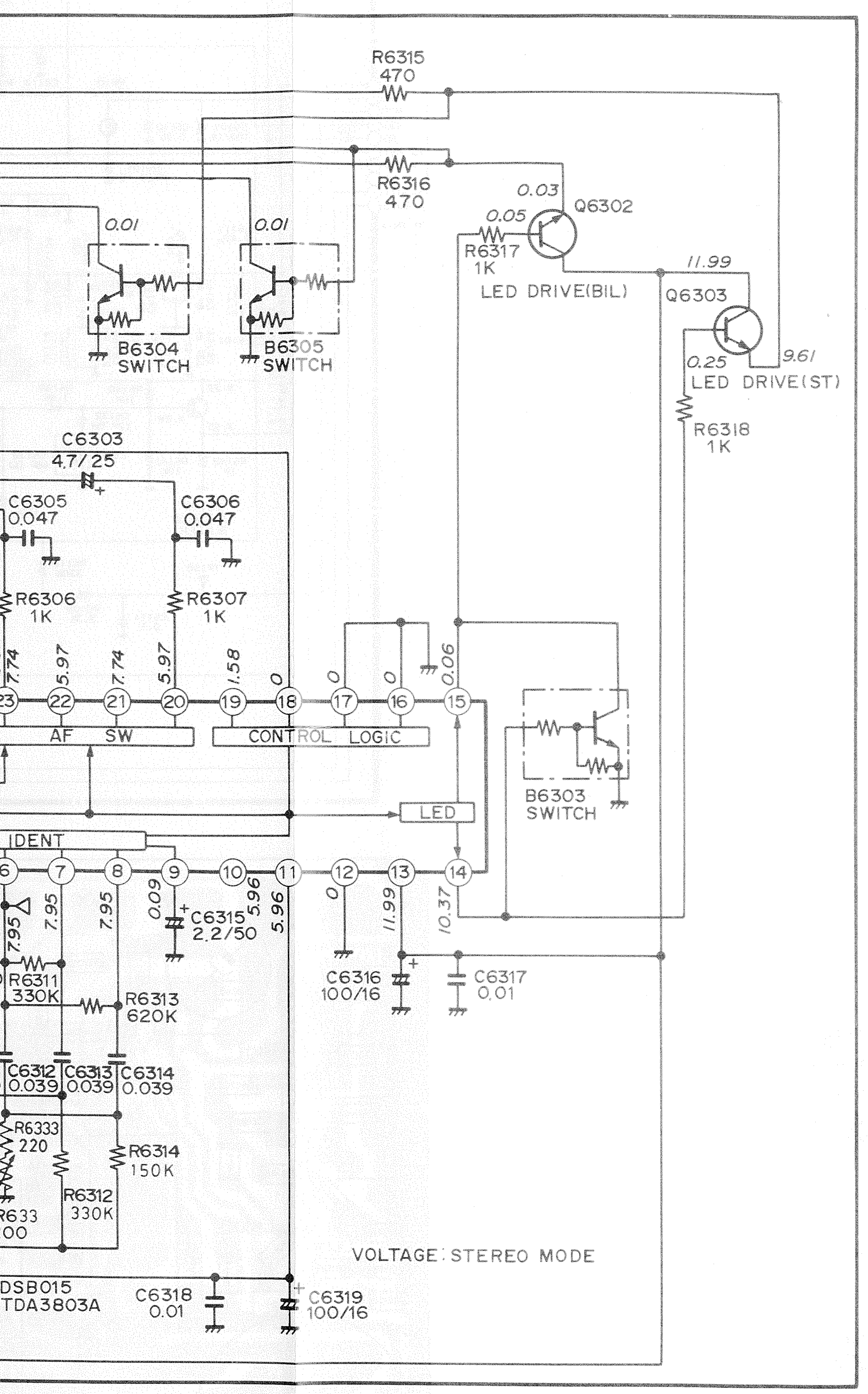
TN-3 P.C.B.


CN301
CN302
R315
R306
R317
C303
C302
SVR301
C301
C304
C306
C305
IC301
28
15
14
1
10
5
C315
C316
C314
C313
C312
C311
C310
L301
C319
SVR303
SVR302
C308
C309
Lo. No. 6301~

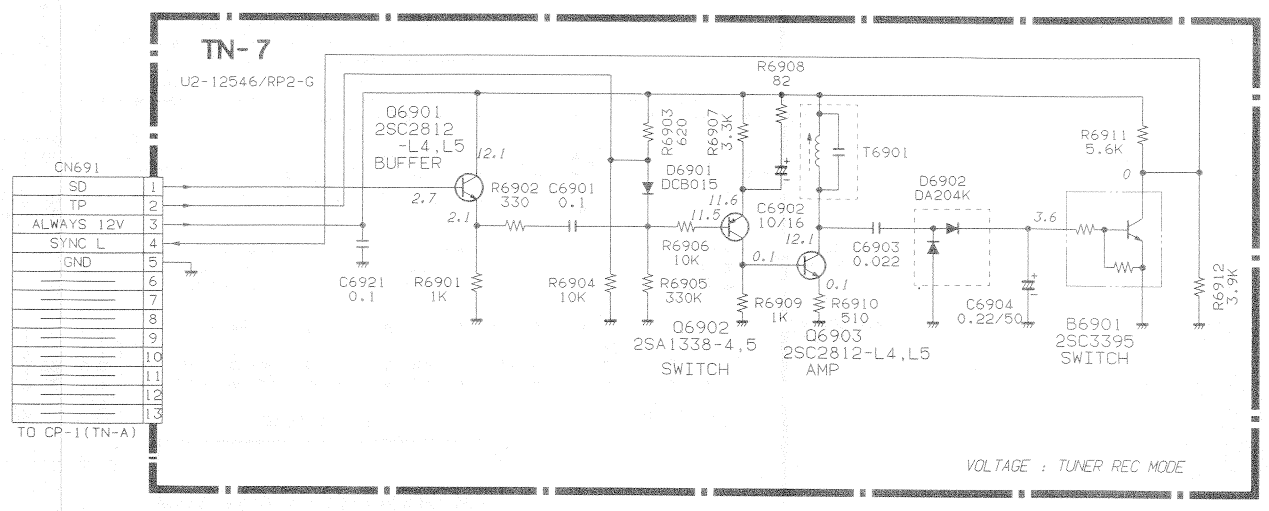

CN691
SD
TP
ALWAYS 12V
SYNC L
GND
TO CP-1(TN-A)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

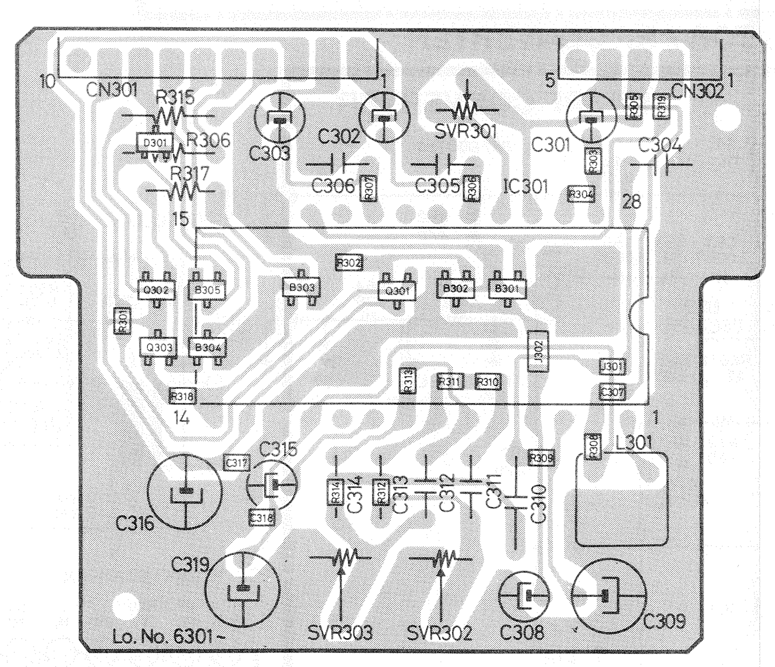
ER


R6315
470
R6316
470
0.03
Q6302
0.05
R6317
1K
LED DRIVE(BIL)
11.99
Q6303
0.25
9.61
LED DRIVE(ST)
R6318
1K
0.01
0.01
B6304
SWITCH
B6305
SWITCH
C6303
4.7/25
C6305
0.047
C6306
0.047
R6306
1K
R6307
1K
7.74
5.97
7.74
5.97
1.58
0
0
0
0.06
23
22
21
20
19
18
17
16
15
AF SW
CONTROL LOGIC
B6303
SWITCH
LED
IDENT
6
7
8
9
10
11
12
13
14
7.95
7.95
7.95
0.09
5.96
5.96
0
11.99
10.37
C6315
2.2/50
R6311
330K
R6313
620K
C6312
0.039
C6313
0.039
C6314
0.039
C6316
100/16
C6317
0.01
R6333
220
R6314
150K
R6312
330K
R633
00
VOLTAGE:STEREO MODE
DSB015
TDA3803A
C6318
0.01
C6319
100/16

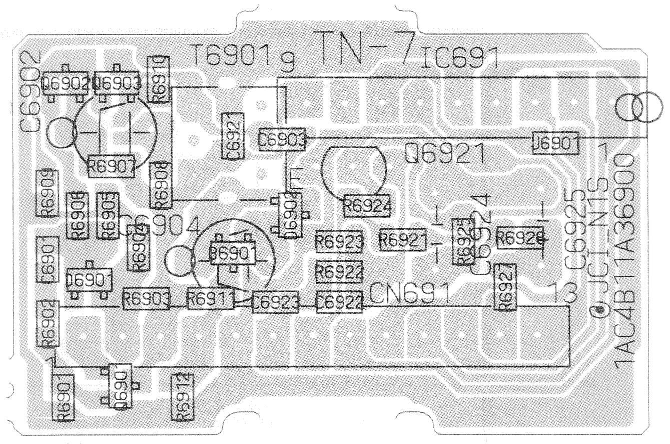
TN-7 SYNC DETECTOR


TN-7
U2-12546/RP2-G
CN691
SD
TP
ALWAYS 12V
SYNC L
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
TO CP-1(TN-A)
Q6901
2SC2812
-L4,L5
BUFFER
12.1
2.7
2.1
R6902
330
C6901
0.1
C6921
0.1
R6901
1K
R6904
10K
R6908
82
R6903
620
R6907
3.3K
D6901
DCB015
11.6
11.5
R6906
10K
R6905
330K
C6902
10/16
12.1
0.1
0.1
R6909
1K
R6910
510
Q6902
2SA1338-4,5
SWITCH
Q6903
2SC2812-L4,L5
AMP
T6901
D6902
DA204K
C6903
0.022
3.6
C6904
0.22/50
R6911
5.6K
0
R6912
3.9K
B6901
2SC3395
SWITCH
VOLTAGE : TUNER REC MODE

TN-3 P.C.B.

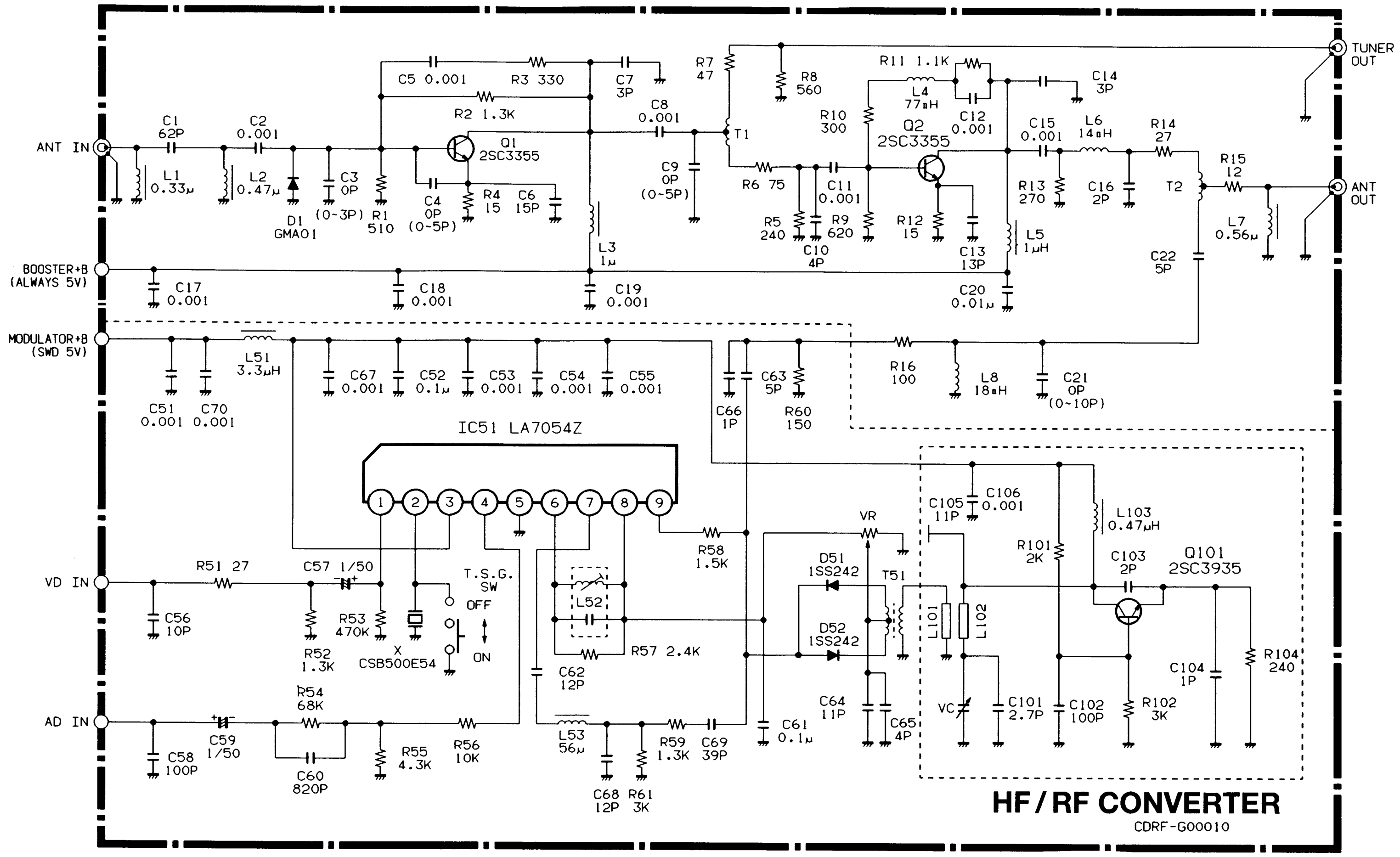

10
CN301
R315
R306
R317
15
C303
C302
SVR301
5
CN302
1
C301
C304
C306
C305
IC301
28
Q302
B305
B303
Q301
B302
B301
Q303
B304
14
1
C315
L301
C316
C314
C313
C312
C311
C310
C319
SVR303
SVR302
C308
C309
Lo. No. 6301~

TN-7 P.C.B.

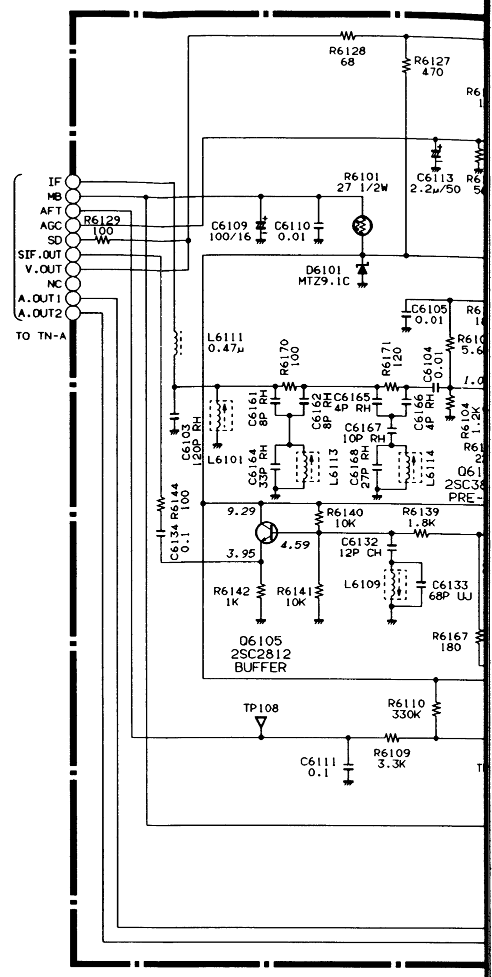

T6901
9
TN-7
IC691
C6902
Q6902
Q6903
R6910
C6903
R6907
C6921
Q6921
J6901
R6924
C6904
B6901
R6923
R6921
R6926
C6925
C6924
R6922
D6901
R6903
R6911
C6923
C6922
CN691
13
1
JCT N1S
1AC4B11A36900
R6901
R6912

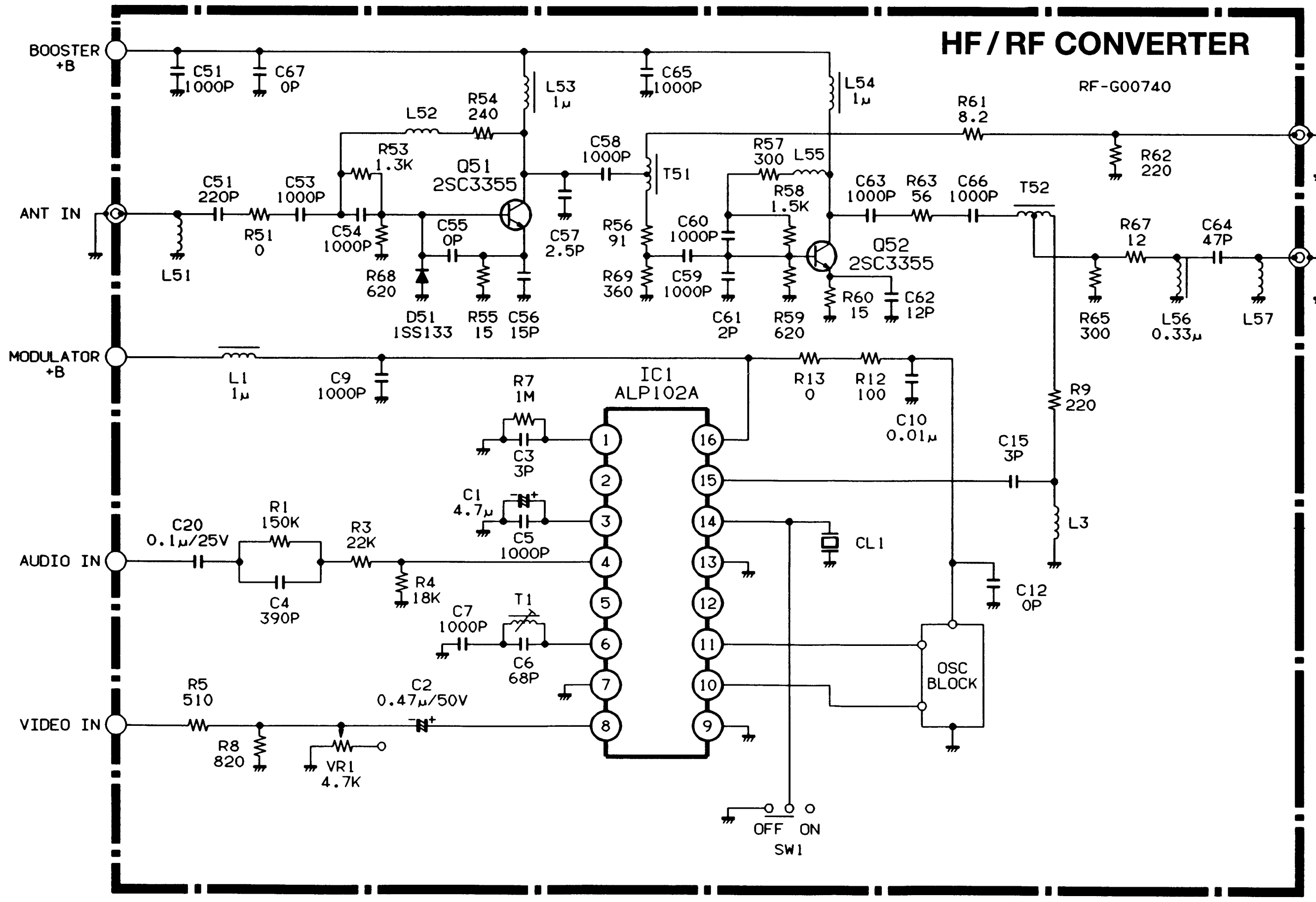
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

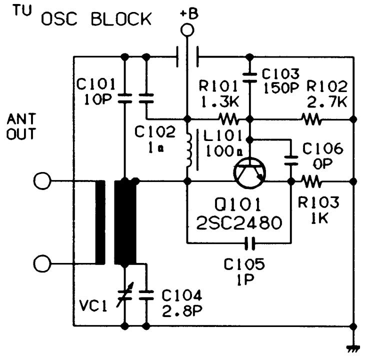
K
J
I
H
G
F
E
D
C
B
A


ANT IN
BOOSTER+B (ALWAYS 5V)
MODULATOR+B (SWD 5V)
VD IN
AD IN
TUNER OUT
ANT OUT
Q1 2SC3355
Q2 2SC3355
IC51 LA7054Z
T.S.G. SW OFF ON
X CSB500E54
D1 GMA01
D51 1SS242
D52 1SS242
T51
VR
Q101 2SC3935
HF / RF CONVERTER
CDRF-G00010

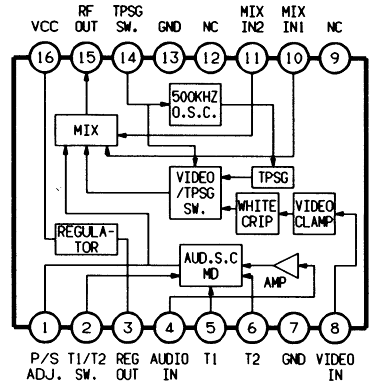
HF MODULATOR / RF CONVERTER

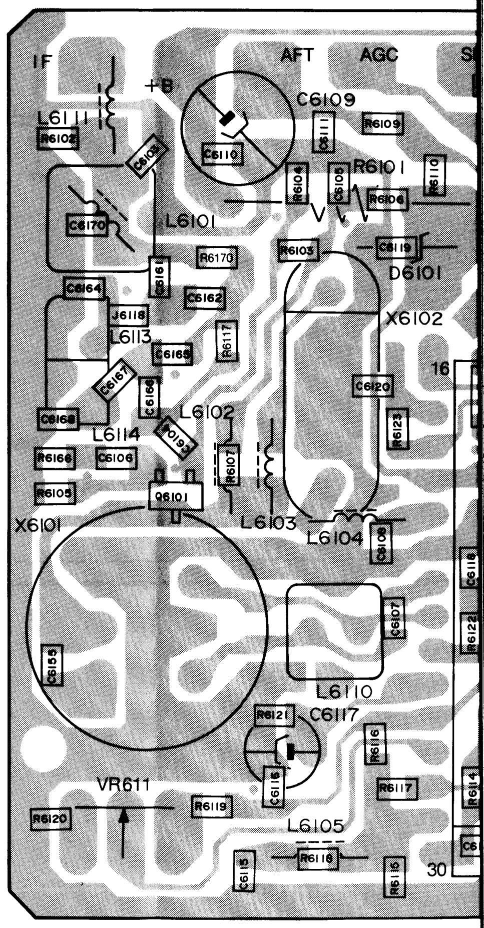

IF
MB
AFT
AGC
SD
SIF.OUT
V.OUT
NC
A.OUT1
A.OUT2
TO TN-A
D6101 MTZ9.1C
Q6105 2SC2812 BUFFER
TP108


HF / RF CONVERTER
RF-G00740
BOOSTER +B
ANT IN
MODULATOR +B
AUDIO IN
VIDEO IN
VTR TU
ANT OUT
Q51 2SC3355
Q52 2SC3355
D51 1SS133
IC1 ALP102A
OSC BLOCK
CL1
OFF ON SW1

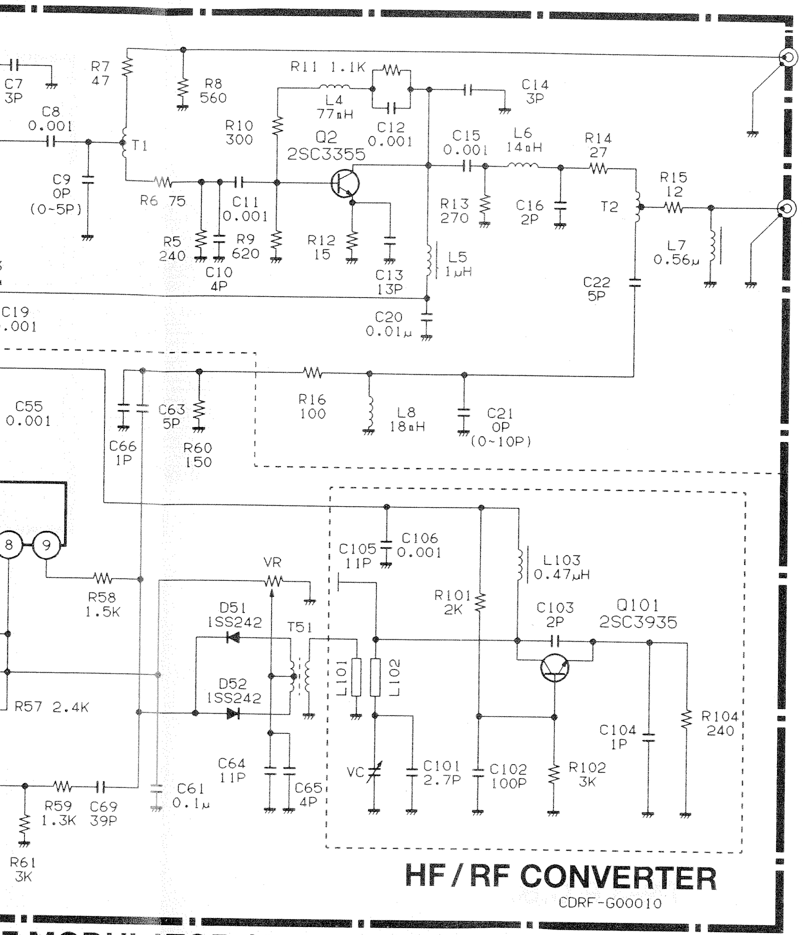

OSC BLOCK
+B
Q101 2SC2480
VC1

IC1 BLOCK DIAGRAM


VCC
RF OUT
TPSG SW.
GND
NC
MIX IN2
MIX IN1
NC
MIX
500KHZ O.S.C.
TPSG
VIDEO /TPSG SW.
WHITE CRIP
VIDEO CLAMP
REGULA-TOR
AUD.S.C MD
AMP
P/S ADJ.
T1/T2 SW.
REG OUT
AUDIO IN
T1
T2
GND
VIDEO IN


IF
+B
AFT
AGC
L6111
C6109
R6101
L6101
D6101
X6102
L6113
L6114
L6102
X6101
L6103
L6104
L6110
C6117
VR611
L6105

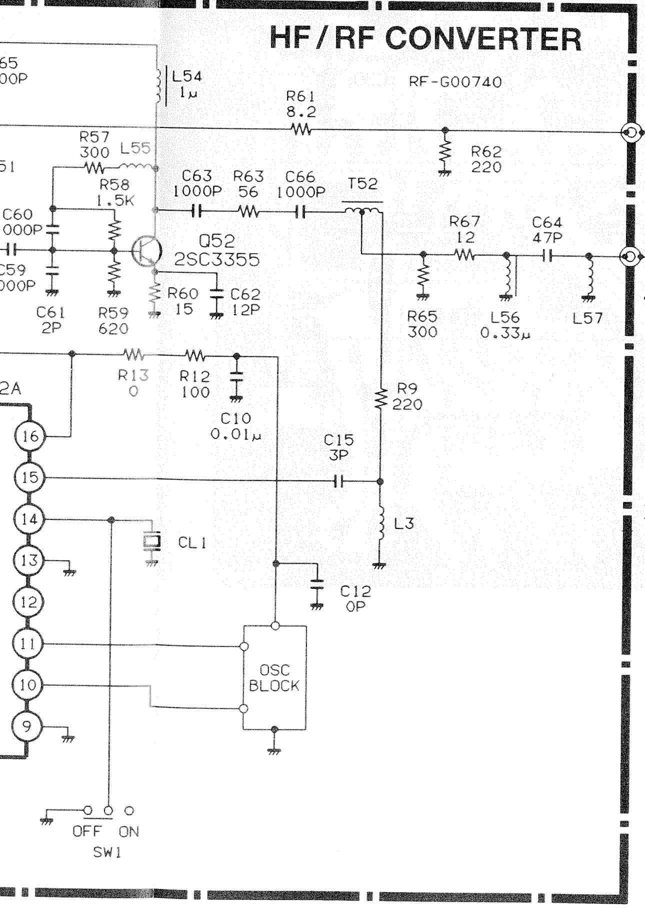
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

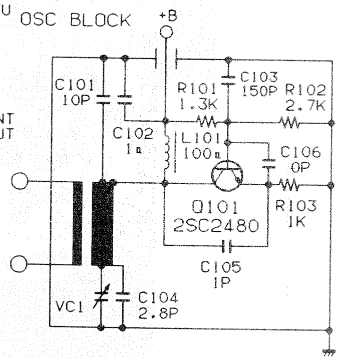

TUNER OUT
ANT OUT
R11 1.1K
L4 77nH
Q2 2SC3355
C14 3P
C15 0.001
L6 14nH
R14 27
R15 12
T2
L7 0.56μ
C22 5P
C20 0.01μ
R16 100
L8 18nH
C21 0P (0~10P)
VR
D51 1SS242
D52 1SS242
T51
C105 11P
C106 0.001
L103 0.47μH
R101 2K
C103 2P
Q101 2SC3935
C104 1P
R104 240
L101
L102
VC
C101 2.7P
C102 100P
R102 3K
R57 2.4K
R58 1.5K
R59 1.3K
C69 39P
R61 3K
C61 0.1μ
C64 11P
C65 4P

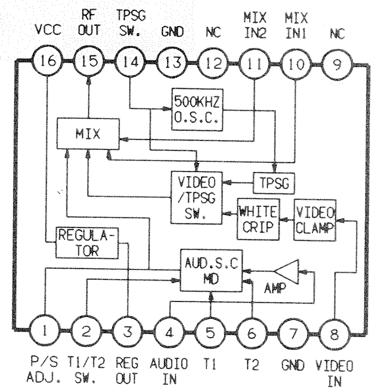
HF / RF CONVERTER

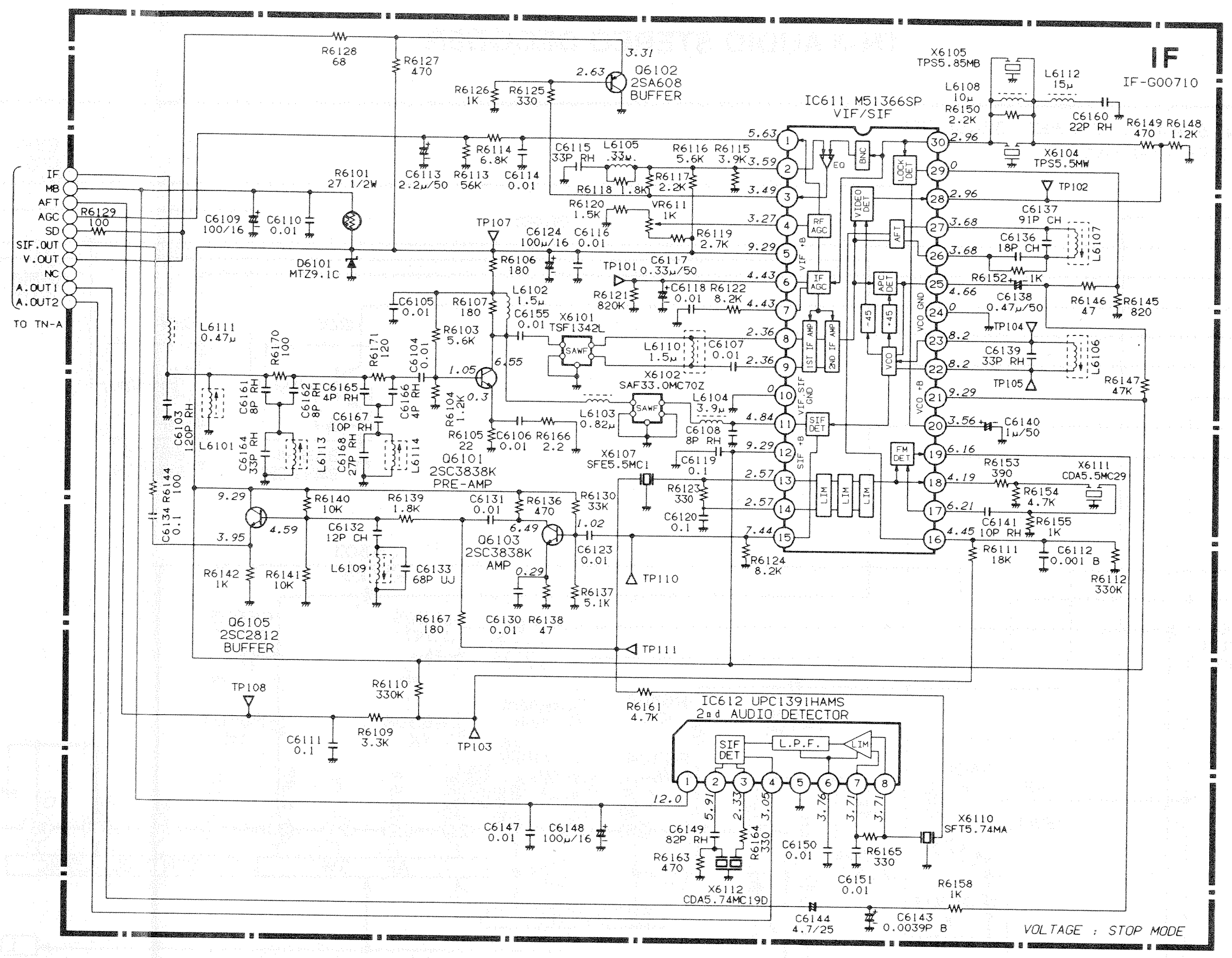
CDRF-G00010

F MODULATOR / RF CONVERTER

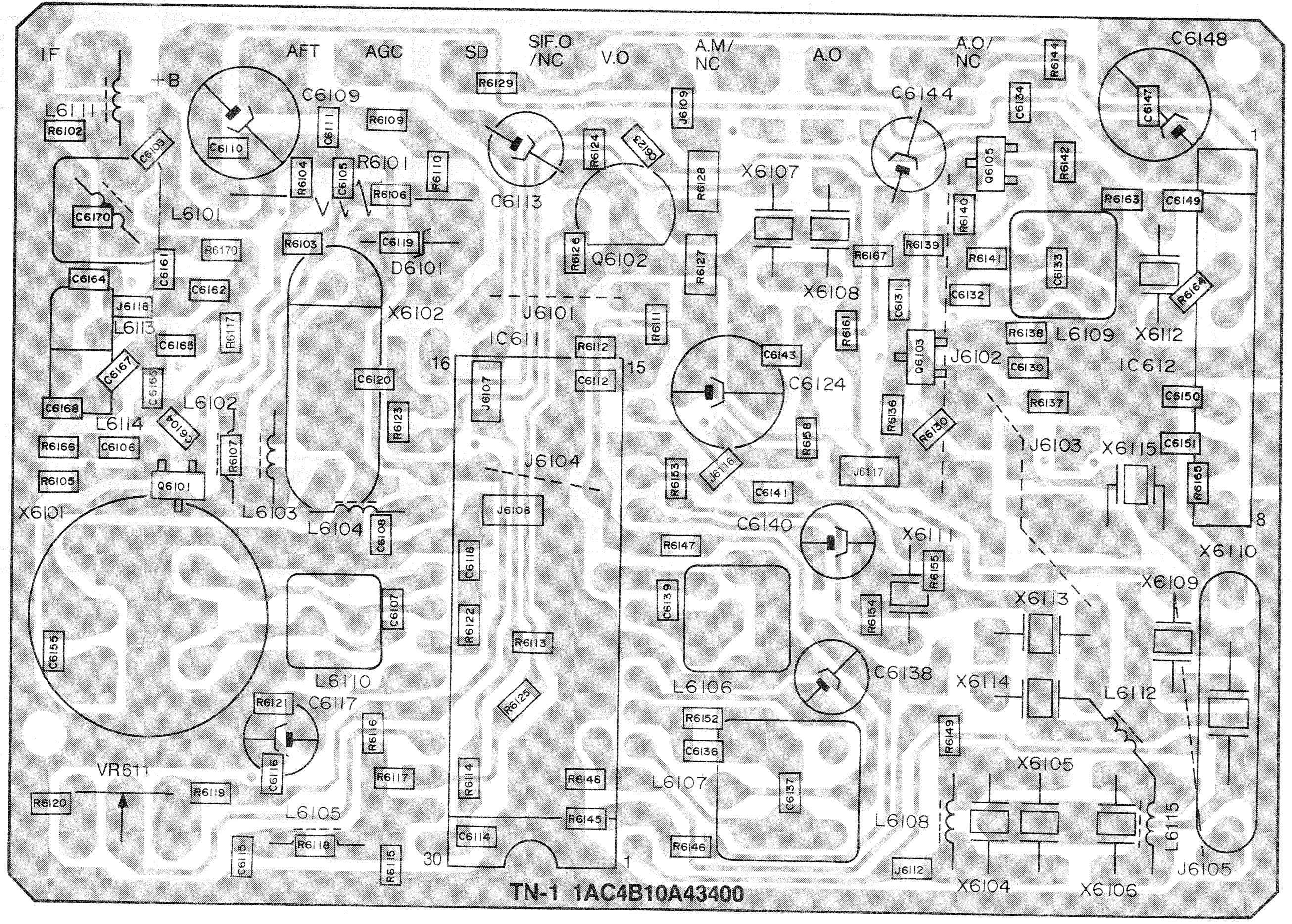

HF / RF CONVERTER
RF-G00740
L54 1μ
R61 8.2
R62 220
VTR TU
ANT OUT
R57 300
L55
R58 1.5K
C63 1000P
R63 56
C66 1000P
T52
Q52 2SC3355
R60 15
C62 12P
R67 12
C64 47P
R65 300
L56 0.33μ
L57
R59 620
R13 0
R12 100
C10 0.01μ
R9 220
C15 3P
L3
CL1
C12 0P
OSC BLOCK
OFF ON
SW1


OSC BLOCK
+B
C101 10P
R101 1.3K
C103 150P
R102 2.7K
C102 1n
L101 100n
C106 0P
Q101 2SC2480
R103 1K
C105 1P
VC1
C104 2.8P


IC1 BLOCK DIAGRAM
VCC
RF OUT
TPSG SW.
GND
NC
MIX IN2
MIX IN1
NC
MIX
500KHZ O.S.C.
VIDEO /TPSG SW.
TPSG
WHITE CRIP
VIDEO CLAMP
REGULA-TOR
AUD.S.C MD
AMP
P/S ADJ.
T1/T2 SW.
REG OUT
AUDIO IN
T1
T2
GND
VIDEO IN

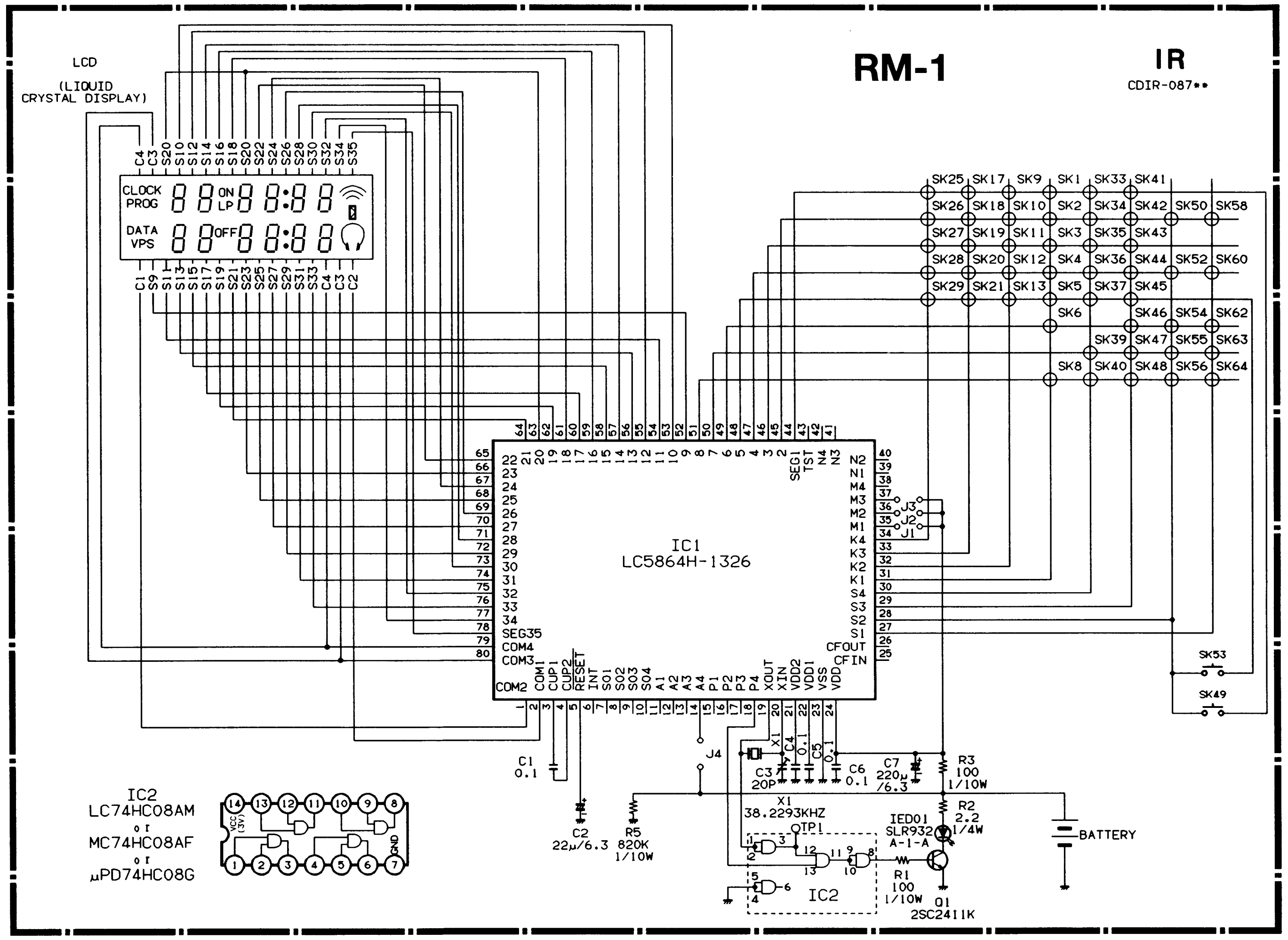

IF
IF-G00710
IF
MB
AFT
AGC
SD
SIF.OUT
V.OUT
NC
A.OUT1
A.OUT2
TO TN-A
Q6102 2SA608 BUFFER
IC611 M51366SP VIF/SIF
X6105 TPS5.85MB
L6112 15μ
X6104 TPS5.5MW
D6101 MTZ9.1C
X6101 TSF1342L
X6102 SAF33.0MC70Z
Q6101 2SC3838K PRE-AMP
X6107 SFE5.5MC1
Q6103 2SC3838K AMP
Q6105 2SC2812 BUFFER
X6111 CDA5.5MC29
IC612 UPC1391HAMS 2nd AUDIO DETECTOR
X6110 SFT5.74MA
X6112 CDA5.74MC19D
TP101
TP102
TP103
TP104
TP105
TP107
TP108
TP110
TP111
VOLTAGE : STOP MODE

ZF / IF


IF
AFT
AGC
SD
SIF.O /NC
V.O
A.M/ NC
A.O
A.O/ NC
+B
L6111
C6109
R6101
C6113
Q6102
X6107
C6144
C6148
L6101
D6101
X6102
J6101
IC611
X6108
L6109
X6112
IC612
C6124
J6102
L6113
L6114
L6102
J6103
X6115
X6101
L6103
L6104
J6104
C6140
X6111
X6109
X6110
X6113
L6110
C6117
L6106
C6138
X6114
L6112
VR611
L6105
L6107
X6105
L6108
L6115
X6104
X6106
J6105

TN-1 1AC4B10A43400

RM-1 IR REMOTE CONTROL


RM-1
IR
CDIR-087••
LCD
(LIQUID CRYSTAL DISPLAY)
CLOCK PROG
DATA VPS
ON LP
OFF
IC1
LC5864H-1326
IC2
LC74HC08AM
or
MC74HC08AF
or
µPD74HC08G
X1
38.2293KHZ
QTP1
C1 0.1
C2 22µ/6.3
C3 20P
C6 0.1
C7 220µ /6.3
R5 820K 1/10W
R3 100 1/10W
R2 2.2 1/4W
R1 100 1/10W
IED01 SLR932 A-1-A
Q1 2SC2411K
BATTERY
J4
SK53
SK49
SK25 SK17 SK9 SK1 SK33 SK41
SK26 SK18 SK10 SK2 SK34 SK42 SK50 SK58
SK27 SK19 SK11 SK3 SK35 SK43
SK28 SK20 SK12 SK4 SK36 SK44 SK52 SK60
SK29 SK21 SK13 SK5 SK37 SK45
SK6 SK46 SK54 SK62
SK39 SK47 SK55 SK63
SK8 SK40 SK48 SK56 SK64
N2 N1 M4 M3 M2 M1 K4 K3 K2 K1 S4 S3 S2 S1
CFOUT CFIN
SEG35 COM4 COM3 COM2
COM1 CUP1 CUP2 RESET INT SO1 SO2 SO3 SO4 A1 A2 A3 A4 P1 P2 P3 P4 XOUT XIN VDD2 VDD1 VSS VDD
SEG1 TST N4 N3
IC2

(FM706 V1)

AVAILABLE KEY FUNCTION OF REMOTE CONTROL UNIT

KEY NO.	FUNCTION NORMAL	FUNCTION SHIFT	
1	CL (CANCEL)	0	USE
2	0/AV	AV	USE
3	OK	OK	USE
4	RESET	ERASE	USE
5	M	MARK	USE
6	◐	◐	USE
8	◕	◕	USE
9	7	7	USE
10	8	8	USE
11	9	9	USE
12	SC	AUDIO	USE
13	COUNT	COUNT	USE
17	4	4	USE
18	5	5	USE
19	6	6	USE
20	SP/LP	SP/LP	USE
21	CHECK	CHECK	USE
25	1	1	USE
26	2	2	USE
27	3	3	USE
28	VPS		USE
29	PROG	◷ (CLOCK)	USE
33	● (REC)		USE
34	⏪ (REW)	⏪ (REW)	USE
35	▶ (PLAY)	▶ (PLAY)	USE

KEY NO.	FUNCTION NORMAL	FUNCTION SHIFT	
36	◢ -	◢ -	USE
37	⏩ (FF)	⏩ (FF)	USE
39	⏻	⏻	USE
40	◢ +	◢ +	USE
41	→¦←	→¦←	USE
42	▮▶ (SLOW)	⊖ (A.DUB)	
43	■/⏻ (STOP)	■/⏻ (STOP)	USE
44	(YELLOW)	(YELLOW)	USE
45	⏸ (PAUSE)	⏸ (PAUSE)	USE
46	(RED)	(RED)	USE
47	(GREEN)	(GREEN)	USE
48	(BLUE)	(BLUE)	USE
49	SHIFT	SHIFT	USE
50	+(MODE)	+(MODE)	
52	INDEX	INDEX	USE
53	📶 (TRANS)	📶 (TRANS)	USE
54	-(MODE)	-(MODE)	
55	🔑	🔑	USE
56	CH +	CH +	USE
58	VPT	☰▭ (EXPAND)	USE
60	TV	☰■ (HALT)	USE
62	TEXT	☰? (REVEAL)	USE
63	MENU	◷ (TIME)	USE
64	CH -	CH -	USE

IR-08708

(FM706 Q1)

AVAILABLE KEY FUNCTION OF REMOTE CONTROL UNIT

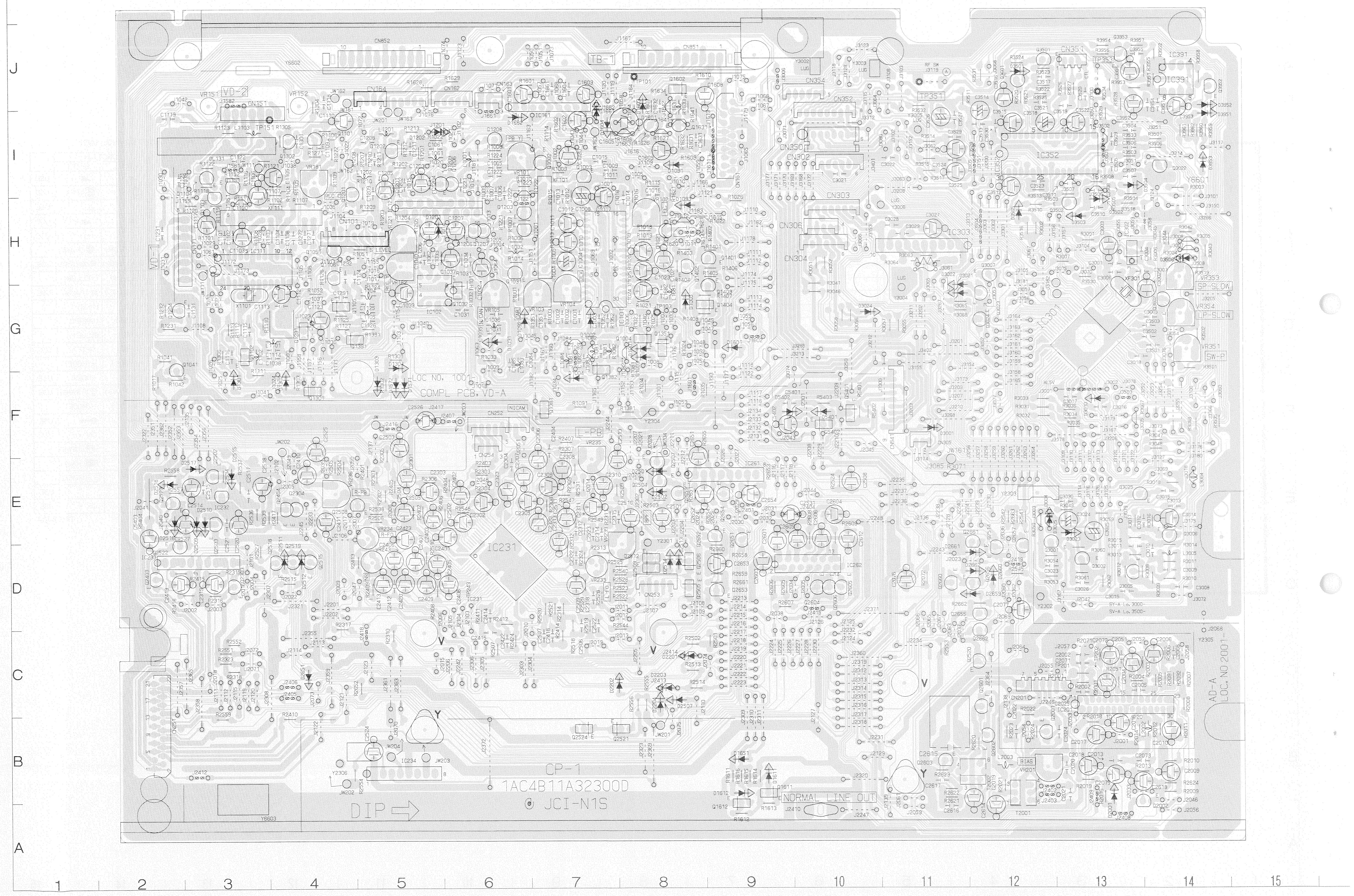
KEY NO.	FUNCTION NORMAL	FUNCTION SHIFT	
1	CL (CANCEL)	0	USE
2	0/AV	AV	USE
3	OK	OK	USE
4	RESET	ERASE	USE
5	M	MARK	USE
6	◐	◐	USE
8	◕	◕	USE
9	7	7	USE
10	8	8	USE
11	9	9	USE
12	SC	AUDIO	USE
13	COUNT	COUNT	USE
17	4	4	USE
18	5	5	USE
19	6	6	USE
20	SP/LP	SP/LP	USE
21	CHECK	CHECK	USE
25	1	1	USE
26	2	2	USE
27	3	3	USE
28	VPS		USE
29	PROG	◷ (CLOCK)	USE
33	● (REC)		USE
34	⏪ (REW)	⏪ (REW)	USE
35	▶ (PLAY)	▶ (PLAY)	USE

KEY NO.	FUNCTION NORMAL	FUNCTION SHIFT	
36	◢ -	◢ -	USE
37	⏩ (FF)	⏩ (FF)	USE
39	⏻	⏻	USE
40	◢ +	◢ +	USE
41	→¦←	→¦←	USE
42	▮▶ (SLOW)	⊖ (A.DUB)	
43	■/⏻ (STOP)	■/⏻ (STOP)	USE
44	(YELLOW)	(YELLOW)	
45	⏸ (PAUSE)	⏸ (PAUSE)	USE
46	(RED)	(RED)	
47	(GREEN)	(GREEN)	
48	(BLUE)	(BLUE)	
49	SHIFT	SHIFT	USE
50	+(MODE)	+(MODE)	
52	INDEX	INDEX	USE
53	📶 (TRANS)	📶 (TRANS)	USE
54	-(MODE)	-(MODE)	
55	🔑	🔑	USE
56	CH +	CH +	USE
58	VPT	☰▭ (EXPAND)	
60	TV	☰■ (HALT)	
62	TEXT	☰? (REVEAL)	
63	OSA		USE
64	CH -	CH -	USE

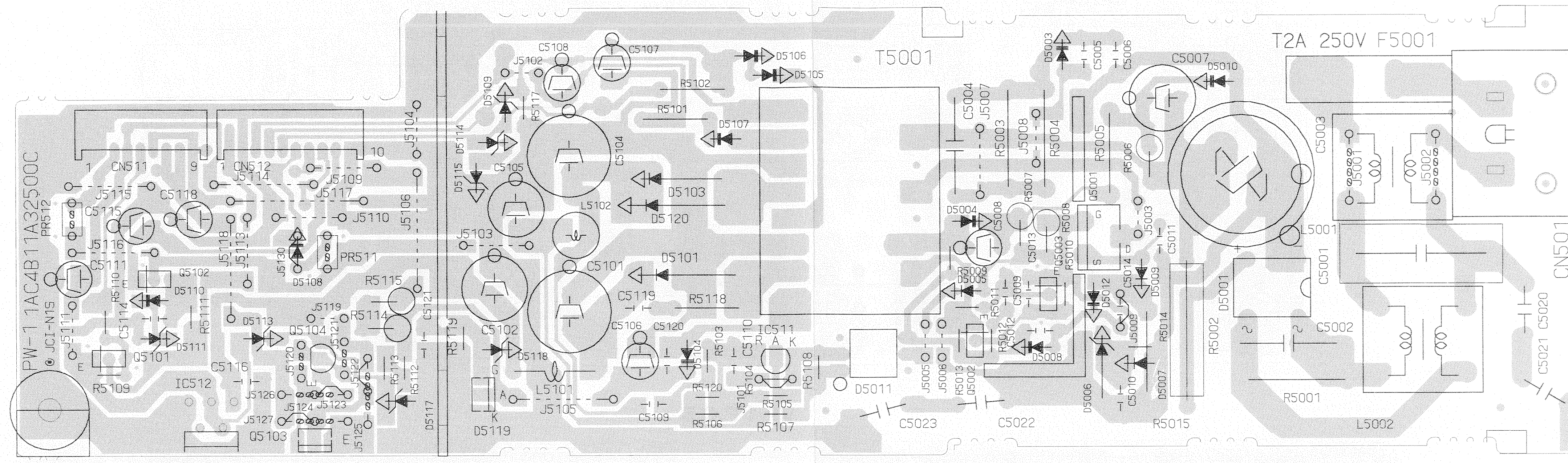
IR-08704

Schaltpläne u. Platinen FM706Q1/FM706V1

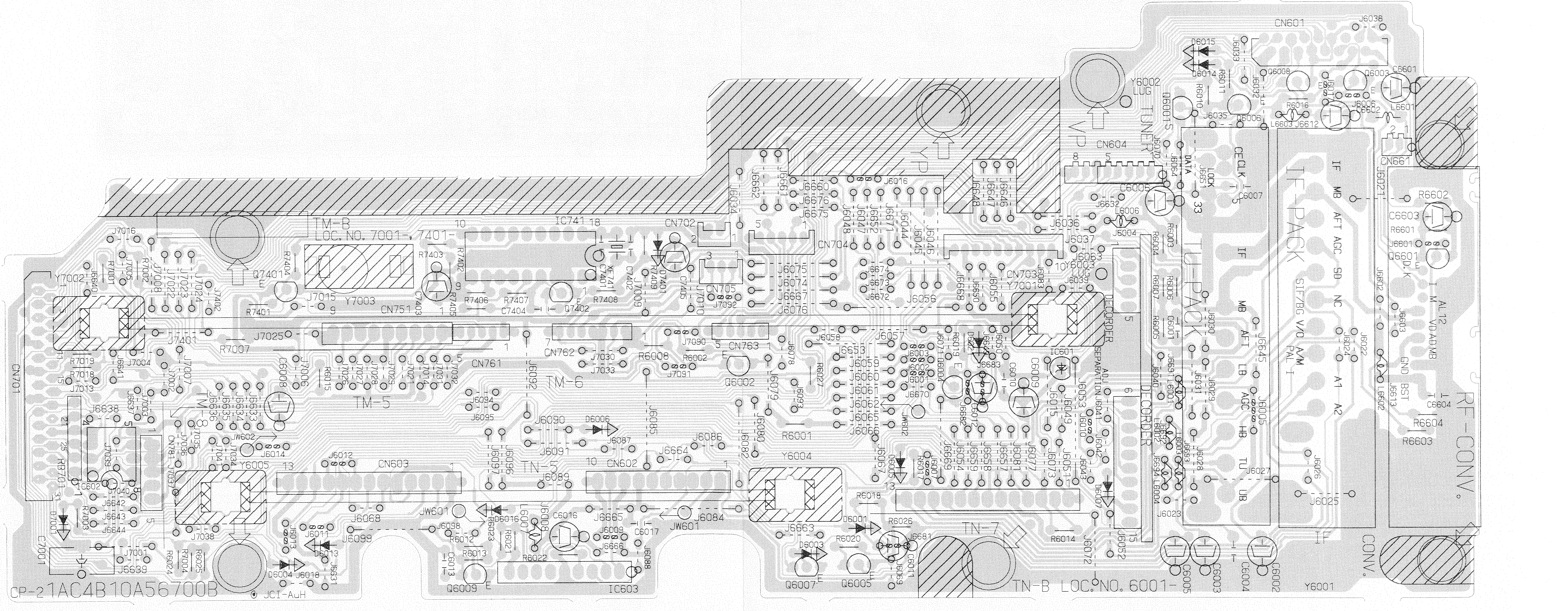
CP-1 P.C.B.


K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
CP-1
1AC4B11A32300D
JCI-N1S
DIP
NORMAL LINE OUT
LOC NO. 1001
COMPL PCB, VD-A
AD-A
LOC.NO 2001
VD-1
VD-2
TB-1
L-PB
NICAM
PB Y
R-PB
LUG
IC231
IC301
IC352
IC391
IC303
IC101
IC102
IC111
IC161
IC234
IC252
IC201
CN851
CN852
CN151
CN161
CN162
CN164
CN252
CN253
CN254
CN301
CN302
CN303
CN304
CN306
CN350
CN351
CN352
CN354
TP151
TP351
TP353
SP-SLOW
LP-SLOW
SW-P
VR351
VR353
VR354
RF SW
BIAS
Y6601
Y6602
Y6603
SV-A Lo. 3000-
SV-A Lo. 3500-
V
Y

PW-1 P.C.B.


PW-1 1AC4B11A32500C
JCI-N1S
T5001
T2A 250V F5001
CN501
CN511
CN512
L5001
L5002
L5101
L5102
IC511
IC512

CP-2 P.C.B.


CP-2 1AC4B10A56700B
JCI-AuH
TM-B LOC. NO. 7001-, 7401-
TN-B LOC. NO. 6001-
CN601
CN602
CN603
CN604
CN701
CN702
CN703
CN704
CN751
CN761
CN762
CN763
IC603
IC741
TUNER
TU-PACK
IF-PACK
RF-CONV.
DECODER
Y6001
Y6002
Y6004
Y6005
Y7002
Y7003

K

J

I

H

G

F

E

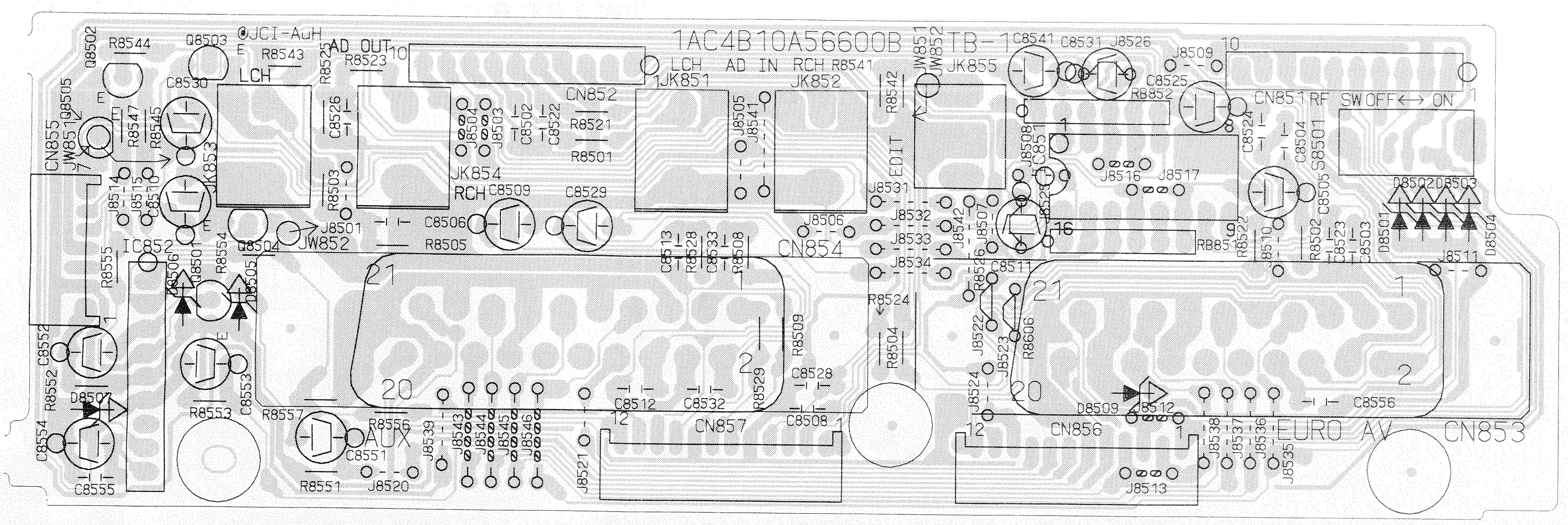
D

C

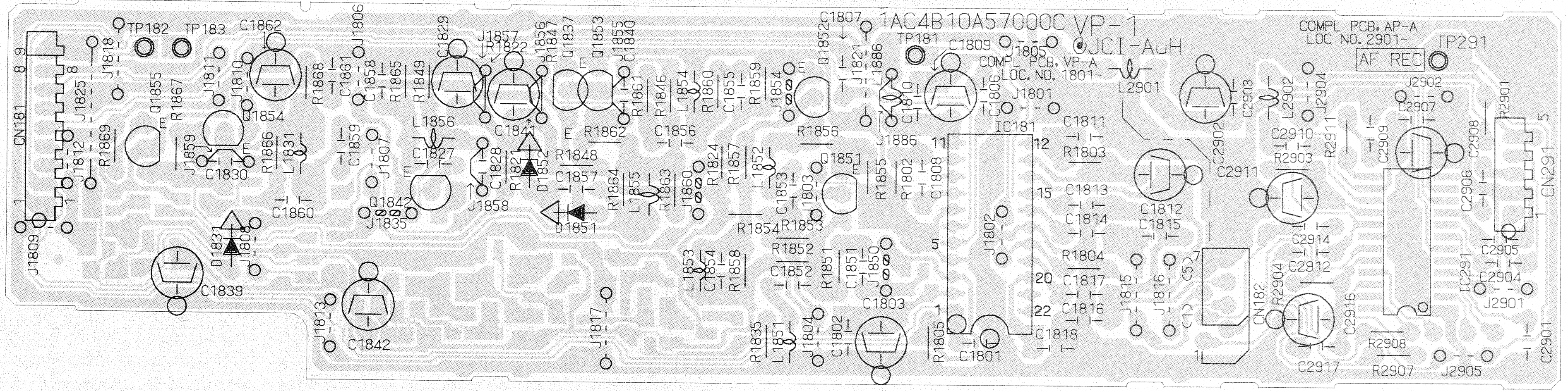
B

A

TB-1 P.C.B.


1AC4B10A56600B TB-1
JCI-AuH
AD OUT
LCH
AD IN
RCH
JK851
JK852
JK853
JK854
JK855
CN851
CN852
CN853
CN854
CN855
CN856
CN857
RF SW OFF ↔ ON
EDIT
AUX
EURO AV
IC852

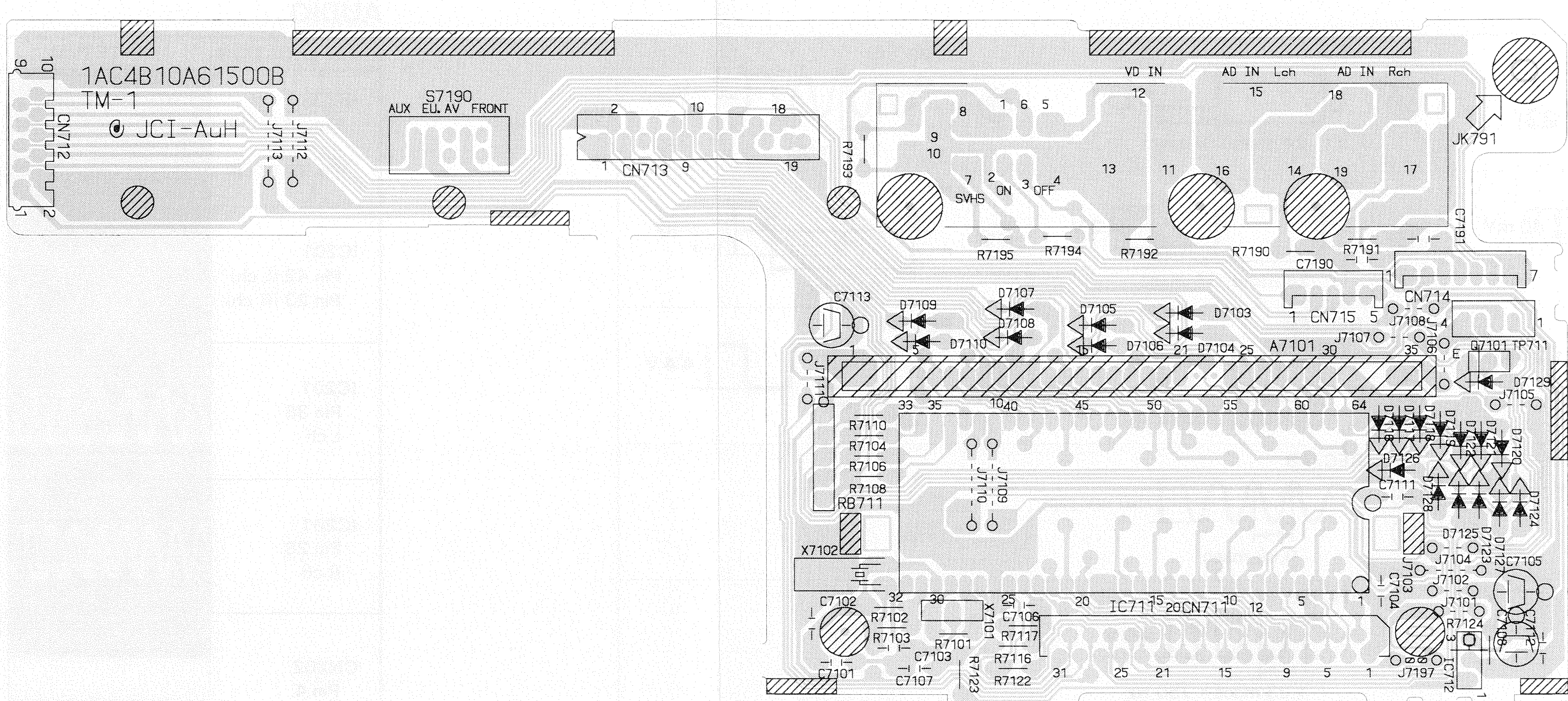
VP-1 P.C.B.


1AC4B10A57000C VP-1
JCI-AuH
COMPL PCB. AP-A
LOC NO. 2901-
COMPL PCB. VP-A
LOC. NO. 1801-
AF REC
TP181
TP182
TP183
TP291
CN181
CN182
CN291
IC181
IC291

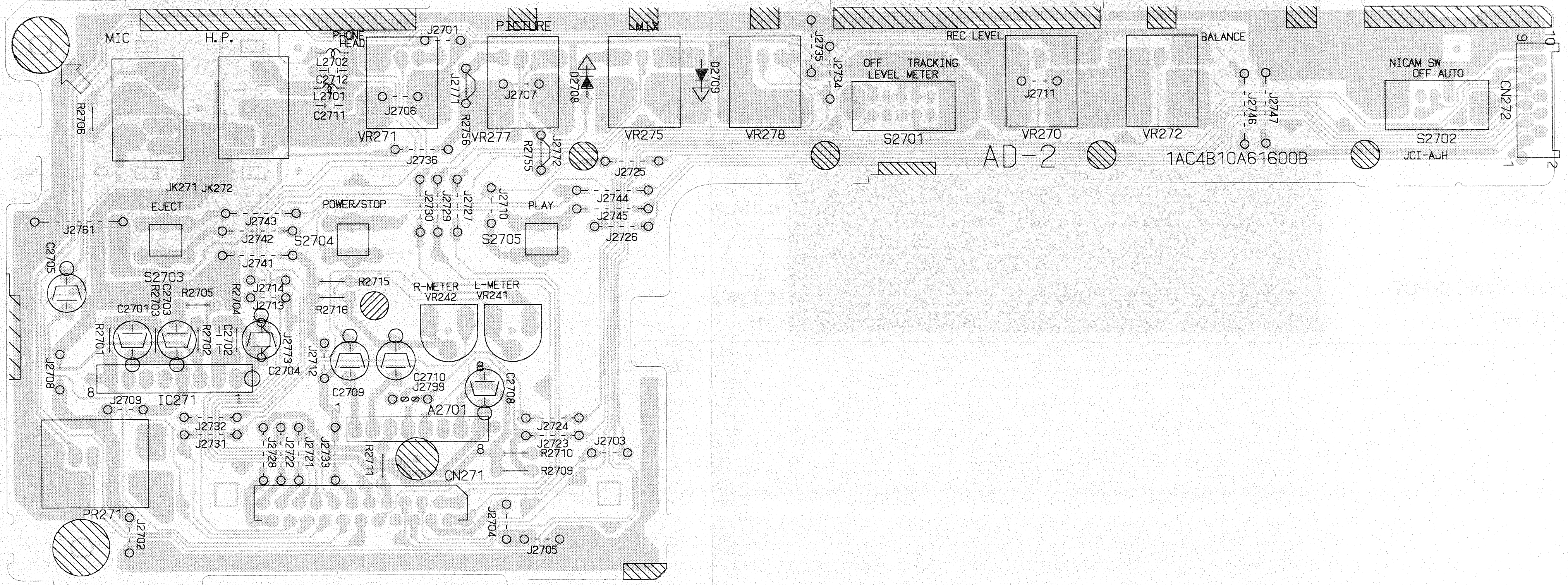
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Schaltpläne u. Platinen FM706Q1/FM706V1

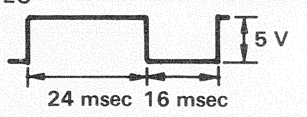
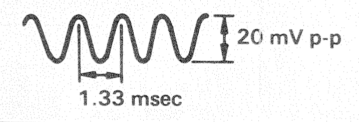
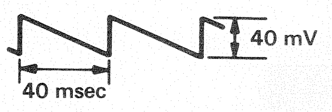
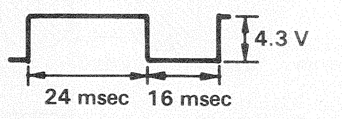
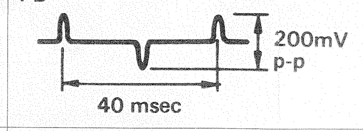
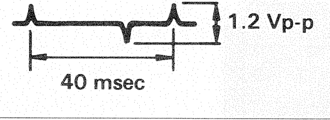
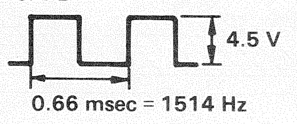
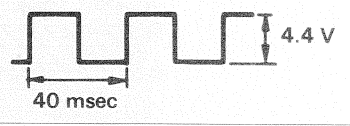
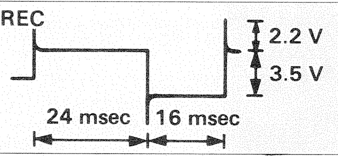
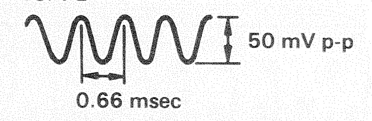
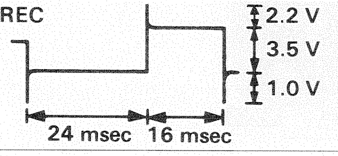
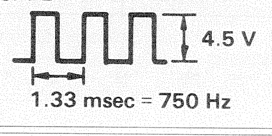
TM-1 P.C.B.


1AC4B10A61500B
TM-1
JCI-AuH
CN712
J7112
J7113
S7190
AUX EU AV FRONT
CN713
R7199
VD IN
AD IN Lch
AD IN Rch
SVHS ON OFF
JK791
R7195
R7194
R7192
R7190
R7191
C7190
C7191
C7113
D7109
D7107
D7108
D7105
D7103
D7110
D7106
D7104
A7101
CN714
CN715
J7108
J7107
D7101
TP711
J7111
D7129
J7105
R7110
R7104
R7106
R7108
RB711
J7109
J7110
D7126
D7128
C7111
D7124
D7125
D7127
J7104
J7102
J7101
C7105
X7102
C7102
R7102
R7103
R7101
C7103
C7101
C7107
R7123
X7101
C7106
R7117
R7116
R7122
IC711
CN711
C7104
J7103
R7124
C7112
J7197
IC712

AD-2 P.C.B.


MIC
H.P.
PHONE HEAD
PICTURE
MIX
REC LEVEL
BALANCE
NICAM SW
OFF AUTO
CN272
OFF LEVEL METER
TRACKING
S2701
S2702
VR271
VR277
VR275
VR278
VR270
VR272
AD-2
1AC4B10A61600B
JCI-AuH
J2701
J2706
J2707
J2711
J2771
J2756
J2755
J2772
J2735
J2734
J2746
J2747
D2708
D2709
L2702
L2712
L2701
C2711
R2706
J2736
J2725
JK271 JK272
EJECT
POWER/STOP
PLAY
J2761
J2743
J2742
J2741
S2704
S2705
S2703
J2730
J2729
J2727
J2710
J2744
J2745
J2726
C2705
R2715
R2716
R-METER VR242
L-METER VR241
C2701
R2703
R2705
R2704
J2714
J2713
R2701
R2702
C2702
J2773
C2704
J2712
C2710
J2799
C2708
C2709
A2701
J2708
J2709
IC271
J2732
J2731
J2728
J2722
J2721
J2733
R2711
CN271
J2724
J2723
R2710
R2709
J2703
PR271
J2702
J2704
J2705

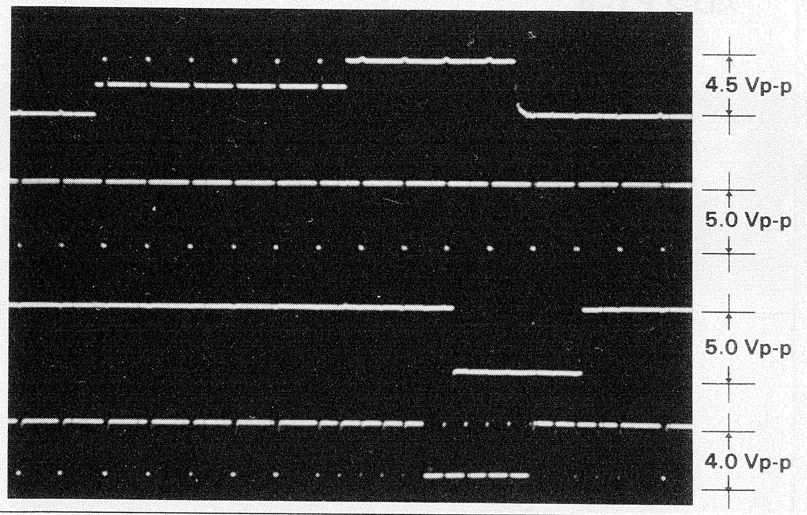
SERVO

IC352 (LA7124 or LA7123)		⑫	REC  5 V 24 msec 16 msec	㉘	REC/PB  20 mV p-p 1.33 msec
③	P.B.  40 mV 40 msec	⑮	PB  4.3 V 24 msec 16 msec	㉙	PB  200mV p-p 40 msec
④	P.B.  1.2 Vp-p 40 msec	㉓ ㉖	REC/PB  4.5 V 0.66 msec = 1514 Hz	㉚	REC/PB  4.4 V 40 msec
⑦	REC  2.2 V 3.5 V 24 msec 16 msec	㉔ ㉕	REC/PB  50 mV p-p 0.66 msec		
⑧	REC  2.2 V 3.5 V 1.0 V 24 msec 16 msec	㉗	REC/PB  4.5 V 1.33 msec = 750 Hz		

V-LOCK PULSE GENERATION CIRCUIT WAVEFORM (IC391, Q3952, Q3953, D3951, D3952)

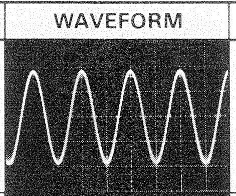
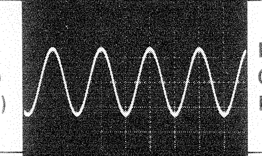
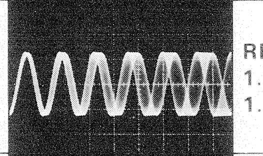
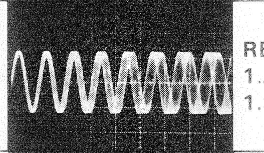
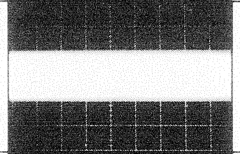
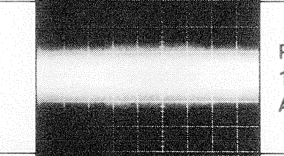
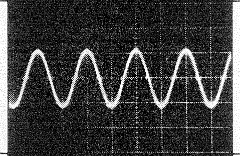
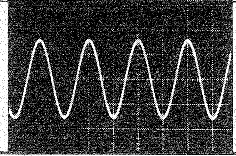
[STILL Mode]

1. V-LOCK PULSE OUTPUT
   · Cathode of D3951 and D3952
2. H-SYNC OUTPUT
   · Pin 2 of IC391
3. V-SYNC OUTPUT
   · Pin 4 of IC391
4. COMPOSITE SYNC INPUT
   · Pin 6 of IC391



WF-S-VP

AUDIO

TEST LOCATION	WAVEFORM	MODE/LEVEL
IC201 Pin 68 (L ch) and Pin 78 (R ch)		REC 0.7 Vp-p AV Input
IC201 Pin 42 (L ch) Pin 23 (R ch)		REC 0.5 Vp-p Modulation Level
IC201 Pin 38 L ch		REC 1.2 Vp-p 1.4MHz Carrier
IC201 Pin 28 R ch		REC 1.2 Vp-p 1.8 MHz Carrier
CN202 Pin 4		REC 100m Vp-p 1.4M/1.8M AF REC
CN202 Pin 3		PB 1.5 Vp-p AF PB
IC201 Pin 56 (L ch) Pin 9 (R ch)		REC/PB 1.1 Vp-p AD Level
IC201 Pin 47 (L ch) Pin 20 (R ch)		REC/PB 1.5 Vp-p Audio Output

NOTE:
Audio input Condition is 1KHz sine-wave signal from AV terminal.

WF-A2

IC301 SYSTEM CONTROL & DIGITAL SERVO MPU PIN FUNCTIONS TABLE

No.	Name	I/O	I/O Signal Function
1	D-PG	I	Drum PG pulse input.
2	S-DATA IN	I	Terminal for communication of mode data with other microprocessors.
3	S-DATA OUT	O	Data is 8bitX12 block serial data.
4	SSB CLCK	O	The clock pulse is output from this microprocessor.
5	INSERT ON/OFF	I	Insert function ON/OFF terminal.
6	ENV SW	I	Video head selection signal (PB envelop detection signal) input for 4-head special playback.
7	DOC	I	Drop out detection pulse input. Used for absorbing STILL noise.
8	C-FG 2.	I	Capstan motor FG-2 signal input. Used for brake timing control at slow mode.
9	C-FG 1.	I	Capstan motor FG-1 signal input. (Capstan speed control)
10	D-FG	I	Head drum motor FG signal input. (Drum speed control)
11	PB CTL P.	I	CTL head playback pulse input.
12	COMP SYNC	I	Composite sync signal input.
13	RF SW P.	O	Output of RF switching pulse created by head drum PG.
14	AF SW P.	O	Output of Hi-Fi (FM) audio head switching pulse created by head drum PG.
15	VD P	O	Dummy VD (V LOCK) pulse output at special playback mode.
16	REC CTL	O	Recording control (CTL) signal output.
17	DRUM PWM	O	Head drum motor rotation (speed/phase) control signal output. (Signal as Pulse Width Moduration)
18	CAP PWM	O	Capstan motor rotation (speed/phase) control signal output. (Signal as Pulse Width Moduration)
19	A-VSS	-	Ground terminal for internal A/D converter.
20	AV REF	I	Reference voltage input for internal A/D converter.
21	AF ENV	I	Hi-Fi (FM) audio head envelope detection signal input for ATR function.
22	VD ENV	I	Video head envelope detection signal input for ATR function.
23	D-PG MM	I	CR for drum PG pulse delay. (Head switching position adjustment.)
24	SLOW TRK CR	I	CR for slow tracking adjustment.
25	DEW S.	I	Dew sensor input terminal.
26	OPTION	I	Terminal to alter internal specifications. (Set up input voltage: 0.6V for 2Head / 1.8V for 3Head / 4.4V for 4Head models)
27	T.TOP S.	I	Sensor signal input for tape beginning detection.
28	T.END S.	I	Sensor signal input for tape end detection.
29	RESET	I	Initial reset terminal for this IC.
30	VDD	-	IC power supply input. (5Vdc)
31	X2	-	IC clock OSC terminal. Frequency is 12MHz.
32	X1	-	
33	VSS	-	Ground terminal
34	H AMP SW	O	Video head amplifier (SP/LP head or SUB head) selection signal output. (4/3 HEAD models)
35	ROTARY	O	Chroma phase control signal output for 4/3 head models.
36	VD REC	O	Recording indication signal. Used for equiped rotary erase head models.
37	SLOW+STILL	O	Output signal indicating SLOW/STILL modes.
38	CTL GAIN DOWN	O	CTL head AMP gain control signal output.
39	-	-	
40	CAP F/R	O	Capstan motor forward/revers control.
41	DRUM P	O	Outputs the drum jitter compensation in the slow mode.
42	CAP STR/STP	O	Outputs the capstan motor start and brake pulses in the slow mode.
43	REMARK	O	Output the control (CTL) signal re-recording control signal. Three-value output (H, M, L).
44	FE CTL	O	Output the rotary erase head ON/OFF control.
45	ANT/VIDEO	O	Antenna through or video deck RF output select (Video when LOW).
46	AF REC	O	Hi-Fi (FM) audio head recording timing control signal.
47	LP H	O	"HIGH" output when tape speed is set to LP mode.
48	POWER UP	O	"HIGH" output except when power is off. Indicating that power is ON.
49	SPECIAL PB	O	Output in special playback modes (R/F-SEARCH, STILL and SLOW).
50	PB H	O	Signal indicating playback mode.
51	REC	O	Signal indicating recording mode.
52	INPUT SEL. V	O	Signal for selecting video input signal.
53	INPUT SEL. A	O	Signal for selecting audio input signal.
54	NORMAL/HIFI	O	Signal for selecting normal audio and Hi-Fi audio signal.
55	ST/L/R	O	Signal for selecting audio output signal (STEREO / Lch / Rch / NORMAL).
56	A.DUB	O	Signal indicating audio dubbing mode.
57	A MUTE	O	Signal disable Hi-Fi audio signal output.
58	A REC MUTE	O	Signal disable normal audio signal output.
59	A NOR REC	O	Signal indicating normal audio recording.
60	A NOR PB	O	Signal indicating normal audio playback.
61	ML-M	O	Loading motor rotation speed (medium speed) indication signal.
62	ML-L	O	Loading motor rotation speed (low speed) indication signal.
63	ML-R	O	Loading motor rotation direction (REV) indication signal.
64	ML-F	O	Loading motor rotation direction (FWD) indication signal.
65	FF+REW	O	Signal indicating FF or REW modes.
66	STLL+SLW2	O	Drop out pulse width selection signal output to DOC circuit.
67	VSS	-	IC ground terminal.
68	-	I	Normaly pull-up 5Vdc.
69	SP/LP	O	"LOW" output when tape speed is set to SP mode. "HIGH" is set to LP mode.
70	EDIT IN	I	Edit mode control terminal.
71	SW DATA 0	I	3-bit data indicating operation position of mechanism.
72	SW DATA 1	I	
73	SW DATA 2	I	
74	FL-START SW	I	Switch input indicating start of cassette loading or discharge by cassette mechanism.
75	SAFETY SW	I	Input terminal for accidental erasur prevention switch. No operation to recording mode while "LOW" is input.
76	-	-	
77	VDD	-	IC power supply terminal. (5Vdc)
78	T.REEL P.	I	Pulse input for detection of take-up reel table rotation.
79	S.REEL P.	I	Pulse input for detection of supply reel table rotation.
80	AV CTL	O	AV terminal (pin8 of 21pin AV socket) control signal output.

YP4H91SE

IC711 (M50959) TIMER MPU PIN FUNCTIONS TABLE (FM706 Q1)

No.	Name	I/O	I/O Signal Function
1	VDD	-	IC power supply input. (5 Vdc)
2	-	-	-
3	BLUE BACK ON	O	Blue back ON / OFF indicating signal output to OSD circuit.
4	PLL CLOCK	O	PLL tuning DATA , CLOCK and CE (enable) signal output to tuner / IF unit.
5	PLL DATA	O	
6	PLL CE	O	
7	BILINGUAL	I	Audio transmission system indication signal (BILINGUAL) input from decoder circuit.
8	COMMON CLK	O	Terminal for communication of respective data with E2PROM IC, OSD IC or tuning PLL IC.
9	COMMON DATA	I/O	The clock pulse is output from this microprocessor.
10	E2PROM CS	O	E2PROM access (enable) signal output.
11	PAL / SECAM	O	-
12	CH +	O	CH+ terminal control signal output.
13	STEREO	I	Audio transmission system indication signal (STEREO) input from decoder circuit.
14	AUDIO MUTE	O	"H" output (Audio Signal Mute) during tuning period.
15	VIDEO MUTE	O	"H" output (Video Signal Mute) during tuning period.
16	OSD CS	O	Chip enable (access) signsl output to OSD IC.
17	SSB CLK	I	Terminal for communication of mode data with other MPU.
18	SSB SDA OUT	O	The clock pulse is input from system control MPU.
19	SSB SDA IN	I	Data is 8bit X 12 block serial data.
20	AFT C	I	AFT S-curve input terminal.
21	SD (H SYNC)	I	Horizontal sync detection signal input for exsistence channel discrimination.
22	VPS SCL	O	Clock shignal for VPS decoder IC.
23	VPS SDA	I/O	Data exchange with the VPS decoder IC.
24	POWER FAIL	I	Power failuer mode set at "L" input.
25	IR SIG.	I	Remote control signal input.
26	VSS	-	IC Ground terminal.
27	RESET	I	Initial reset terminal for this IC. Reset when "LOW".
28	X IN	-	IC clock OSC terminal.
29	X OUT	-	Frequency is 6 MHz.
30	XC IN	-	IC clock OSC used in the power failure mode.
31	XC OUT	-	Frequency is 32.768 kHz.
32	VSS	-	IC Ground terminal.
33	-	-	-
34	KEY IN 4	I	Operation key data inputs.
35	KEY IN 3	I	
36	KEY IN 2	I	
37	KEY IN 1	I	
38	Vpp	I	- 30 V input for display (FLD) drive.
39	-	-	-
40	SEG p	O	Display segment outputs (FLD). (Included key-scan output)
41	SEG o	O	
42	SEG n	O	
43	SEG m	O	
44	SEG l	O	
45	SEG k	O	
46	SEG j	O	
47	SEG i	O	
48	G9	O	Display grid outputs (FLD).
49	G8	O	
50	G7	O	
51	G6	O	
52	G5	O	
53	G4	O	
54	G3	O	
55	G2	O	
56	G1	O	
57	SEG h	O	Display segment outputs (FLD). (Included key-scan output)
58	SEG g	O	
59	SEG f	O	
60	SEG e	O	
61	SEG d	O	
62	SEG c	O	
63	SEG b	O	
64	SEG a	O	

TMVP_FOS

IC711 (M50959) TIMER MPU PIN FUNCTIONS TABLE (FM706 V1)

No.	Name	I/O	I/O Signal Function
1	VDD	-	IC power supply input. (5 Vdc)
2	TEXT TXD	O	Data output (TXD) terminal fof VIDEOTEXT decoder unit .
3	TEXT RXD	I	Data input (RXD) terminal for VIDEOTEXT decoder unit .
4	PLL CLOCK	O	PLL tuning DATA , CLOCK and CE (enable) signal output to tuner / IF unit.
5	PLL DATA	O	
6	PLL CE	O	
7	BILINGUAL	I	Audio transmission system indication signal (BILINGUAL) input from decoder circuit.
8	COMMON CLK	O	Terminal for communication of respective data with E2PROM IC, OSD IC or tuning PLL IC.
9	COMMON DATA	I/O	The clock pulse is output from this microprocessor.
10	E2PROM CS	O	E2PROM access (enable) signal output.
11	PAL / SECAM	O	-
12	PRESET LEVEL	I	RF field strength detection signal input.
13	STEREO	I	Audio transmission system indication signal (STEREO) input from decoder circuit.
14	AUDIO MUTE	O	"H" output (Audio Signal Mute) during tuning period.
15	VIDEO MUTE	O	"H" output (Video Signal Mute) during tuning period.
16	TEXT CLK	O	Clock signal output to VIDEOTEXT decoder unit .
17	SSB CLK	I	Terminal for communication of mode data with other MPU.
18	SSB SDA OUT	O	The clock pulse is input from system control MPU.
19	SSB SDA IN	I	Data is 8bit X 12 block serial data.
20	AFT C	I	AFT S-curve input terminal.
21	SD (H SYNC)	I	Horizontal sync detection signal input for exsistence channel discrimination.
22	VPS SCL	O	Clock shignal for VPS decoder IC.
23	VPS SDA	I/O	Data exchange with the VPS decoder IC.
24	POWER FAIL	I	Power failuer mode set at "L" input.
25	IR SIG.	I	Remote control signal input.
26	VSS	-	IC Ground terminal.
27	RESET	I	Initial reset terminal for this IC. Reset when "LOW".
28	X IN	-	IC clock OSC terminal.
29	X OUT	-	Frequency is 6 MHz.
30	XC IN	-	IC clock OSC used in the power failure mode.
31	XC OUT	-	Frequency is 32.768 kHz.
32	VSS	-	IC Ground terminal.
33	-	-	-
34	KEY IN 4	I	Operation key data inputs.
35	KEY IN 3	I	
36	KEY IN 2	I	
37	KEY IN 1	I	
38	Vpp	I	- 30 V input for display (FLD) drive.
39	-	-	-
40	SEG p	O	Display segment outputs (FLD). (Included key-scan output)
41	SEG o	O	
42	SEG n	O	
43	SEG m	O	
44	SEG l	O	
45	SEG k	O	
46	SEG j	O	
47	SEG i	O	
48	G9	O	Display grid outputs (FLD).
49	G8	O	
50	G7	O	
51	G6	O	
52	G5	O	
53	G4	O	
54	G3	O	
55	G2	O	
56	G1	O	
57	SEG h	O	Display segment outputs (FLD). (Included key-scan output)
58	SEG g	O	
59	SEG f	O	
60	SEG e	O	
61	SEG d	O	
62	SEG c	O	
63	SEG b	O	
64	SEG a	O	

TMVPSEVT